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IN THIS ISSUE

NEW MATERIALS FOR THE CURRICULUM

A report of progress made on several fronts in California, both on the planning or administrative level, as well as on the experimental or classroom level.

Various points of view on curricular developments are presented by Ralph R. Fields, Associate Superintendent and Chief of the Division of Instruction, California State Department of Education; Lucien B. Kinney, Professor of Education, Stanford University, and his assistant, Katharine Dresden; Edmund J. Robins, San Bernardino Valley College; Francis L. Drag, Curriculum Director, San Diego County Schools; Chester F. Cole, Assistant Professor of Geography, and David Pontius, Graduate Assistant, Fresno State College; and Carl V. Gruhn, South Pasadena-San Marino Senior High School.

MATHEMATICS REQUIREMENTS FOR COLLEGE ENTRANCE

Secondary educators have wondered for some time if the mathematics preparation required by universities were not overly rigid. Dale Carpenter, Supervisor of Mathematics Instruction of the Los Angeles Curriculum Division, and Charles Fabing report on an experimental program in mathematics, which has the consent of the University of California, and which will attempt to meet the needs of college preparatory students other than mathematics, engineering, and science majors. Mr. Fabing is the coordinator of the program.

UNESCO

Was the Pacific Regional Conference of UNESCO held in San Francisco last May just a junket for the student-delegates who attended? Was the Conference "just another convention"? Are the schools doing anything with UNESCO now? These are some of the questions covered by eyewitness reports to the JOURNAL of student-delegates who represented their high schools and junior colleges.

IN DECEMBER

PIONEERING IN GUIDANCE

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In place of the $3 subscription rate, the Society has a group subscription plan which provides annual subscriptions to the JOURNAL at $1 each to all subscribing, provided one-third of the full-time members of the faculty of an institution holding an Institutional Membership join in the plan.

NEW BOOKS

CURRENT publications received in the JOURNAL office recently include the following books and pamphlets:

BUELL, ROBERT K. *California Stepping-Stones.* Stanford: Stanford University Press, 1948. Pp. ix + 238. $3.00.

BURNETT, R. WILL; JAFFE, BERNARD; and ZIM, HERBERT S. *New World of Science.* New York 3: Silver Burdett Co., 1948. Pp. viii + 504. $2.80.

BUTLER, CHARLES H.; and WREN, F. LYNWOOD. *Trigonometry for Secondary Schools.* Boston: D. C. Heath & Co., 1948. Pp. vii + 360. $2.60.

CUSHMAN, ROBERT E. *New Threats to American Freedoms.* Public Affairs Pamphlet No. 143. New York 16: Public Affairs Committee, Inc., 1948. Pp. 32. $0.20.

For Better World Trade. United Nations Publications Sales No. 1948—1—8. Lake Success, New York: Department of Public Information, United Nations, 1948. Pp. 16. $0.15.

FRENCH, THOMAS E.; and SVENSEN, CARL L. *Mechanical Drawing.* New York: McGraw-Hill Book Co., Inc., 1948. Pp. x + 437.

GREENE, HARRY A.; and BALLENGER, H. L. *Iowa Language Abilities Test.* Yonkers: World Book Co., 1948. Put up in packages of 25 tests with Directions for Administering, Key and Class Record. Elementary Test, net $1.70 per package. Intermediate Test, net $2.30 per package. Manual for Interpreting, $0.25 net.

HERBERG, THEODORE; and ORLEANS, JOSEPH B. *A New Geometry for Secondary Schools,* second edition. Boston 16: D. C. Heath & Co., 1948. Pp. vii + 406. $1.92.

MILES, DUDLEY; and POOLEY, ROBERT C. Chicago 11: Scott, Foresman and Co., 1948.
Literature and Life in America. Pp. xviii + 726. $2.80.
Literature and Life in England. Pp. xviii + 822. $3.00.

MOORE, BERNICE M.; and LEAHY, DOROTHY M. *You and Your Family.* Boston 16: D. C. Heath & Co., 1948. Pp. viii + 440. $2.60.

MUELLER, GROVER W.; and ROBERTSON, ELIZABETH C. *Fundamentals of Health and Safety.* New York: D. Van Nostrand Co., Inc., 1948. Pp. 343. $2.40.

PACKARD, LEONARD O.; OVERTON, BRUCE; and WOOD, BEN D. *Geography of the World.* New York 11: The Macmillan Co., 1948. Pp. vii + 488 and 5 Plates.

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California Journal of Secondary Education

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OVERHAULING THE CURRICULUM

"WHY are they continually tinkering with the curriculum? Why not leave it alone and try to do a better job of teaching it?" These queries of protest, voiced last summer by an experienced teacher, indicate a point of view that is probably shared by a considerable number of conservative teachers. The issue thus raised involves the question as to what the curriculum really is and an inquiry into the difficulty of keeping it even relatively undisturbed.

If we try to center our attention upon an attempt to do better teaching, we immediately encounter the problem of organizing the material so that it can be learned more effectually. Moreover, the ability and readiness of the pupils vary widely not only within a given class group, but from class to class. This calls for some selection among available materials, and thus, to an extent, we are tinkering with the curriculum.

Two important educational activities now going on in California illustrate how closely instruction comes to be identified with the curriculum. The California Council on the Improvement of Instruction is engaged in testing the value of current materials for vitalizing the learning situation. In the State Department of Education, the Division of Instruction has undertaken as a major responsibility the preparation of the Curriculum Framework. In both cases, concern for better instruction led directly to the curriculum.

Current educational thought draws a distinction between a course of study and the real curriculum. The former is an attempt to provide a range of instructional materials, in orderly sequence, appropriate for the anticipated needs and probable ability of a group of learners. It usually provides also for a fair degree of adaptability and selection among those materials to permit adjustments corresponding to the variations, in ability and preparation, of a particular group from the hypothetical average. There may even be suggestions as to when and how such adaptations should be made by the teacher.

The real working curriculum consists of the series of experiences in which the learners participate and out of which come changes in their understanding, in their attitudes, and in their ability to do things. Skillful instruction includes the selection of materials most likely to make the experience profitable, but it also includes wise planning of the situation to arouse interest and to provide direction so as to give both vitality and meaning to that experience. Unless these factors combine to make the period or occasion sufficiently provocative to call forth a participating response from the pupil, nothing significant happens and the hour is lost.

There is usually a definite cause for such a failure. The teacher may have misjudged or ignored the available means of arousing interest. He may have failed to utilize past experiences of the pupils in a way to make the new situation a further step toward mastery

and satisfaction. But the most frequent cause of such futile occasions is to be found in the character of the materials presented.

THIS does not imply approval of selecting materials that are merely novel and exciting. To avoid misunderstanding, let us emphasize again the fundamental purpose of the whole instructional program. It exists to help achieve certain objectives which have social and personal value. These, in turn, depend upon progressive changes in the knowledge, the appreciations and loyalties, and the competence of the learners. But these changes are the result of experiences by the pupils and the outcomes of their reactions during those experiences. Instructional materials which do not bring about constructive and profitable experiences are worthless, whether new or old. Fortunately, there is a rich and growing diversity from which to choose, and this prompts the search for ever better means of inducing vivid experiences productive of those outcomes basic to our generally accepted objectives.

The way in which the various factors affecting the quality of a learning experience are interrelated means that the approach intended to improve any one of them will eventually involve the others. Among the various points of attack, probably the most fruitful one is that of trying out and evaluating materials basic to the curriculum.

There are several reasons which seem to justify this comment. If a serious and thoughtful attempt is made to choose materials better suited to the needs of the pupils, the first step is a study of those needs and an analysis of the difficulties which are preventing satisfactory progress. Factors such as the natural interests of the pupil group, their relative ability and previous preparation, the character of their social and economic background, and the probable extent of their further education, all are likely to receive more careful consideration than would be the case if the curriculum were not under question.

The effect upon instruction of such studies pertinent to curriculum changes came out in the controversy over the results of the famous Eight-Year Study. There was no doubt that the objective tests and other devices of evaluation showed that the pupils pursuing the modified and informal program made a better showing on almost every count than did the corresponding groups who followed the traditional curriculum. One of the arguments of those opposed to the experimental program was that the apparently better showing was due to the more skillful teaching which the pupils in those groups received. In fact, this was a point upon which comment had been made by those visiting the various classes. Quite obviously, the teachers in the experimental programs, having studied the needs of their pupils, and other relevant factors before choosing the new materials, had a distinct instructional advantage, quite apart from their eagerness to have the experimental program succeed.

ALTHOUGH most of the innovations affecting certain phases of the curriculum, as reported on some of the following pages, were developed to meet obvious and urgent special conditions, it is a salutary procedure to give periodically a critical scrutiny to that familiar course of study. Even if a searching challenge of the value of various items does not warrant many radical changes, better teaching will almost certainly follow on the part of those who made an honest evaluation. The skillful mechanic who overhauls the engine of your car will probably not make many substitutions of new parts, but the more

serious knocks and sputters will have been eliminated. In a similar way, an occasional well-considered overhauling of the curriculum will result in smoother performance on the part of all concerned.—F. W. T.

A Statement of the Meaning of General Education

For Whom: General education is for all students in Oakland high schools regardless of ability, status, race and the like. It is not intended that the program of general education be conceived as all of the education of any student. Also, this does not mean the same education for all students.

Concerned With: General education is that part of education that is concerned with the necessary knowledge, skills, processes and attitudes required of the individual to be effective as a person and as a member of groups in a democratic society. It is concerned with common needs—those areas of experience necessary for all people. It is not directly concerned with the specialized functioning such as the specific occupational activities of the individual.

For What: General education is for the development of effective citizenship, as an individual and as a member of groups, in a democracy. The realization of each individual's possibilities as a citizen and as a group member in a democracy as well as the directing of these possibilities for the good of the general welfare are important.

Theory of Learning: In general education, objective of learning is changed behavior. The term behavior is intended to mean all kinds of activities on the part of the individual such as thinking, speaking and planning. Changing behavior requires participation in realistic experiences.

Sources of Unity and Synthesis: It is of surpassing importance for the program in general education to provide unity in the secondary school curriculum. This means that the program of general education should contribute to tying the curriculum together. The sources of unity and synthesis are to be found in the purposes of general education. These purposes are to be found in the processes or competencies required of the individual primarily in the broad area of human relationships. This makes imperative the precise definition of purposes in terms of behavior.

Content: The content is that which can be most effective in producing the necessary changes in behavior. While it is impossible to select the exact content for a good part of general education in advance, it is possible to indicate content that can be used. The content selected must have meaning for the learner and tie in with his personal needs. It must also go beyond his personal needs and be related to group (social) needs. There is great need for deliberate planning with reference to the role of content in general education. There are a large number of important learnings not now included for all students. It is important to determine effective possibilities of content for these learnings.

Procedures: General education must move through content to actual changes in the behavior of students. This is most effectively accomplished by decreasing the extent to which the student simply studies about various topics and increasing the extent to which the student has the direct experience of doing.

Achievement and Evaluation: The basis for measuring achievement and determining our expectations is the principle that each individual continues to grow toward his maximum capacity as an effective personality and as a functioning member of groups and of society. Evaluation must be based upon the purposes of general education expressed in terms of behavior and must be accomplished as a result of selecting, assembling, and interpreting an abundance of evidence. This makes imperative the precise definition of purposes in terms of behavior.—*Developed by discussion group of Oakland Senior High School Principals and Curriculum Assistants, 1947-1948, J. Cecil Parker, University of California, Chairman.*

California Framework Committee: A Progress Report

By RALPH R. FIELDS

DURING the school year just past, a State Framework Committee has been working on the problem of drafting a framework for public education in California. This committee has just issued a first tentative statement for the purpose of stimulating groups to make suggestions and criticisms. Because of the interest evidenced throughout the State in this tentative report, and because of the inherent importance of this problem, this summary of the purposes and nature of the work of this committee has been prepared.

THE NATURE AND PURPOSE OF THE COMMITTEE

The leadership rôle of the State with respect to the instructional program of the public schools has been clearly defined, both in law and in practice. In terms of legal requirements, it is the responsibility of the State to establish minimum standards and to exercise regulatory control. The policy of the State Department of Education, however, has been to exercise its leadership function through coöperative work with educational organizations and through consultant and advisory work with county offices and districts, rather than through extensive machinery for control. Thus, the State Department of Education has, as a matter of policy, worked closely with the various educational organizations within the State and their subcommittees in conducting studies and giving publicity to the best thinking and practice as it is developed through the work of these various representative bodies.

There are two very important considerations in curriculum revision which seem to be contradictory to each other. One is the need for sufficient local freedom and latitude to permit adjustments to special needs of pupils in that area. The second is the obligation to maintain reasonable agreement with other sections of the state as to basic content and sequence. This latter is not merely a matter of justice to our great numbers of children moving from school to school, but should represent some professional consensus as to objectives and placement in our total educational program.

Recognition by the State Department of Education of this latter obligation resulted in the appointment of the California Framework Committee, under the chairmanship of Dr. Ralph R. Fields, Associate Superintendent and Chief of the Division of Instruction. Before joining the State Department, Dr. Fields had served on the faculty of Stanford University and later as Superintendent of the San Jose City Schools. He has contributed this explanation for our readers of the essential nature and purposes of the Framework Committee. The work of the Committee will continue although under a change of leadership. It is a serious loss to Education in California that Dr. Fields is leaving his present position to join the staff of Teachers College of Columbia University.

A primary responsibility in the area of state leadership is carried by the California State Curriculum Commission. The functions of the Commission are to advise and recommend to the State

Board of Education, with respect to elementary textbooks for State adoption and minimum standards for courses of study. Throughout the history of its existence, it has always functioned as a group representing the professional educators of the State, and has worked closely with the professional organizations of the State in carrying out its functions. The development of many recommendations and guides has illustrated this policy; for instance, the two *Teachers Guides to Child Development, The Scope and Sequence of Major Learnings,* and *The Social Studies Program for the Public Schools of California.*

In 1941 a study by Miss Helen Heffernan of the State Department of Education revealed that while considerable uniformity in social studies courses existed in the primary grades, in the upper grades of the elementary school and in the junior high school, little uniformity existed. In a series of discussions with members of the State Department, the Curriculum Commission concluded that it was imperative that a more comprehensive study of the over-all program of instruction of the State should be undertaken. The Commission sought the advice and counsel of members of all the educational organizations in the State, as well as the staff members of many of the cities and counties of the State. Out of this activity one clear need was indicated—that the beginning point of the effort should be to describe the over-all program of education rather than to commence to work on the separate parts. The term "A Framework for Public Education in California" had its origin in the meetings with the various educational groups participated in by Curriculum Commission members.

In the meantime, the Commission was facing the necessity of recommending for adoption elementary textbooks for the social studies program. In order to do this, the coöperative development of a social studies guide was undertaken and occupied the major energies of the Commission for several years. Immediately upon the completion of that task, the Commission requested its chairman, State Superintendent Roy E. Simpson, to appoint a state-wide committee for the purpose of developing "A Framework for Public Education in California." He appointed the following members:

Irwin O. Addicott, Assistant Superintendent, Fresno Public Schools
Grace Bird, Director, Bakersfield College
Maurice G. Blair, Assistant Superintendent, Los Angeles Public Schools
Jay D. Conner, Assistant Superintendent, San Diego Public Schools
J. R. Croad, Superintendent, Burbank Public Schools
Aubrey A. Douglass, Associate Superintendent of Public Instruction, State Department of Education
Ralph R. Fields, Associate Superintendent of Public Instruction, State Department of Education
Paul R. Hanna, Professor of Education, Stanford University
Helen Heffernan, Assistant Division Chief, Elementary Education, State Department of Education
Frank B. Lindsay, Assistant Division Chief, Secondary Education, State Department of Education
Bernard J. Lonsdale, Consultant in Elementary Education, State Department of Education
Elda M. Newton, Assistant Superintendent, Butte County Schools
J. Cecil Parker, Associate Professor of Education, University of California
Gladys Potter, Deputy Superintendent, Long Beach Public Schools
Frederic T. Shipp, Principal, Lincoln High School, San Jose
Harold Spears, Coördinator of Curriculum, San Francisco Public Schools
Frank W. Thomas, President Emeritus, Fresno State College
C. C. Trillingham, Superintendent, Los Angeles County Schools
Ethel S. Ward, Director of Instruction, Alameda County Schools

In harmony with the general policy of the Curriculum Commission, and in line with the conviction that it was the only way that significant state-wide progress would ensue, the Framework Committee from the outset of its work has set about to serve as an agency for bringing together the best thinking of the educators of California. The tentative statement just released is the first step in that program. Only as professional organizations, county and city and district staffs, and educators individually study and contribute to its formulations, will anything of significance transpire.

THE WHY? WHAT? WHEN? AND HOW? OF EDUCATION IN CALIFORNIA

What should be the nature of a guide to curriculum improvement in a state as big as California? Certainly, not a prescription of the offering of certain content for each grade or semester. On the other hand, just a general statement of principles underlying a sound program of education was not deemed to be enough. Finally, the committee decided that its task was to develop a framework which would offer help to local teachers and administrators in answering the following questions:

Why do we have public education in California?

What learnings are important?

When should children and youth and adults have the opportunity for certain types of experience?

How should an educational program be organized?

In order to carry out its task, the Framework Committee is proposing a statement with the following major sections:

1. The Purposes of Public Education in California.
2. Basic Principles of Education.
3. The Breadth of Experiences in California Public Schools.
4. Organization of the Instructional Program.
5. Problems and Practices.

A brief discussion of the report is in order.

THE PURPOSES OF PUBLIC EDUCATION IN CALIFORNIA

Education in California is recognized as an institution of all of the people and as the principal means of accomplishing certain definite purposes. The basic source of these specific purposes is the faith in and commitment of the people of the United States to democracy as the way of doing things and the method of accomplishing organized group purposes. Education must develop within the minds and hearts of American youth the basic principles and fundamental ideals of American democracy. But it must do more! Education must stimulate each individual to develop the skills necessary to live democratically and effectively. The Framework Committee has taken the statement of purposes of education prepared by the Educational Policies Commission in 1938 and attempted to reorganize it into a statement of the behaviors in which individuals need to be skilled in order to live democratically. These have been listed within the four major areas described by the Policies Commission:

1. The Objectives of Full Realization of Individual Capacities.
2. The Objectives of Human Relationships.
3. The Ojectives of Economic Efficiency.
4. The Objectives of Civic Responsibility.

BASIC PRINCIPLES OF EDUCATION

The following brief summary of the discussion of basic principles of education will indicate the point of view the Framework Committee is presenting:

1. Education for democratic living is an important social task, and changes as the nature of our democracy changes.

2. The school program must be organized to provide educational opportunity in accordance with the abilities and aptitudes and purposes of each individual.

3. Learning can be stimulated by favorable conditions, such as those suggested by the following principles:

(a) Learning takes place as the individual participates actively in realizing purposes that are interesting and meaningful to him.

(b) Sound purposes result from combined teacher and pupil planning.

(c) Many different learnings occur at the same time.

(d) Learning goes on best in actual life situations, with instructional materials utilized to supplement, deepen, extend, and augment.

(e) Learning is more likely to be effective if experiences are arranged psychologically.

(f) Facts should be used as a means to intelligent thinking in solving problems, not as ends in themselves.

(g) As the individual matures, he should gain increasing respect for knowledge and the scientific method of thought.

4. The curriculum makers of each generation must select that part of our precious inheritance of culture likely to prove most useful to the next generation as a basis for thinking and action.

5. Since there will never be complete agreement concerning what specific content should be chosen, curriculum making is inevitably an area of conflict and uncertainty.

6. Method is an integral part of the curriculum, and the rôle of the teacher is vital.

7. In order to teach successfully, the teacher must understand:

(a) The nature and needs of children, youth, and adults.

(b) The nature of the learning process.

(c) Curricular experiences likely to provide a sound basis for thinking and action.

8. Schools should be administered so that everyone involved (including the student) shall have a part in formulating the policies and regulations under which he lives.

9. In public education the will of the public is vital; an informed and participating community is the best guarantee of a good program, and the incorporation of laymen into groups concerned with school planning protects teachers from misunderstandings that create emotional tensions detrimental to consistent, constructive work.

THE BREADTH OF EXPERIENCES IN CALIFORNIA PUBLIC SCHOOLS

It is the purpose of this section to indicate the different types of experiences that are necessary for the school program to be adequate, indicated in connection with the four major purposes discussed in the first section.

I. Experiences leading to the Objective of Full Realization of Individual Capacities.
   - A. Experience in mastering and using the tools of learning.
   - B. Experiences in healthful living.
   - C. Experiences in becoming a real person.

II. Experiences leading to attainment of the Objectives of Human Relationships.
   - A. Experiences in working and playing with groups of peers.
   - B. Experiences in learning the skills and understandings for Effective Family Living.
   - C. Experiences in learning about other groups.

III. Experiences leading to attainment of the Objectives of Economic Efficiency.
   - A. Experiences leading to becoming an economic producer.
   - B. Experiences leading to becoming an effective consumer.

IV. Experiences leading to the attainment of the Objectives of Civic Responsibility.
   - A. Experiences leading to an appreciation of Democratic Ideals.
   - B. Experiences leading to an understanding of the obligations of responsible American citizenship and to the dedevelopment of the necessary civic skills.

ORGANIZATION OF THE INSTRUCTIONAL PROGRAM

Many problems arise in the attempt to organize an effective program of instruction. It is impossible within the limits of a general State framework to indicate what any specific organization should be. Furthermore, even if such were possible, it would be highly undesirable to have the schools of California all organized in the same fashion. Much more advantageous as the task of the Framework Committee is to indicate the principles of organization felt to be sound in meeting the major problems of organization, and to indicate alternative patterns which seem to hold promise for effective learning.

Four problems of organization are felt to be major: (1) the vertical articulation of the entire program and the major fields of instruction; (2) the horizontal organization of each year of experience; (3) the problem of time allotment for different phases of the program; and (4) the relationship between common experiences and specialized experiences such as vocational education, particularly during the later years of the secondary period.

It is the intention of the Framework Committee to develop a statement of principles governing the organization of the instructional program and then to illustrate with a description of several promising curriculum organizations.

PROBLEMS AND PRACTICES

While it was felt that the principles, purposes, and suggestions for organization would suggest the solutions to many of the common problems facing California educators, the Framework Committee feels that there would be mutual profit from identifying the matters causing concern to teachers and administrators generally. For this reason the committee is suggesting that a start be made in a program to identify these problems and then to report the ways different school systems are meeting them, or think they should be met. Examples of the type of problems in mind are: (1) the organization of learning experiences within the various fields included in the framework; (2) provisions for younger entering students (junior primary, etc.); (3) promotion policies and grade level organization; (4) what does high school graduation mean? (5) articulation between sixth and seventh grades, or eighth and ninth grades, or ninth and tenth grades, depending upon organization.

HOW CAN YOU HELP?

At the end of each section of the report, the Framework Committee has posed an appropriately worded challenge, such as the following, regarding problems: "These are the problems which the Framework Committee is considering as needing exploration. What problems would you suggest? *Let us have your reaction!*" If reactions are forthcoming, then the work of the committee will be important. If they are not, then the report will be just one more report.

How might individuals or groups contribute? Some plans are already in the making. The California Junior College Association is holding a series of regional discussion meetings on October 30 to study the tentative statement, looking toward the formulation of recommendations to come out of their annual fall meeting in November. There is a proposal that a special committee, representing the California Association of Secondary School Administrators, the secondary curriculum coördinators group, and representatives of the State Department in secondary education, vocational education, and guidance, be formed to study the tentative statement in reference to the California high schools. Undoubtedly, several profes-

sional committees of the California School Supervisors' Association will want to study the statement carefully and submit recommendations. The California Association for Health, Physical Education and Recreation, already has a subcommittee at work on the problem.

It is to be hoped that there will be many interested committees studying the statement in terms of whether or not it would seem to show promise of becoming an adequate description of the public school program of California, and one in which all groups or areas of work could function effectively. In addition, the staffs of several county and city school systems have requested copies of the statement in order to submit recommendations. It is to be hoped that many more will do likewise.

Copies of the statement are available in printed form by writing to Ivan R. Waterman, Chief, Bureau of Publications, State Department of Education, Library-Courts Building, Sacramento. The Framework Committee is hopeful that even before its next meeting, scheduled for December, constructive suggestions will begin to come in. Only by such a response will they know that the problem is an important one and that the coöperative efforts of all concerned will bear fruit in the form of constant, state-wide, curriculum improvement.

Schools Overemphasize Verbal Abilities

"The development of an intelligent person, one who is able to analyze problems, to think them through clearly, and to bring to bear on them a wide variety of information, who understands and cherishes significant and desirable social and personal values, who can formulate and carry out a plan of action in the light of his knowledge and values, is not the goal toward which schools and colleges are aiming in practice, yet it is an end essential for the adequate education of a competent citizenry. Furthermore, in a world as complex as ours, a wide variety of special abilities and talents can be utilized.

"The tendency of the schools to capitalize solely on verbal abilities does not take into account what could be gained by a more adequate education of persons who have other talents which are needed but which are often unidentified and usually untrained. If broader objectives were aimed at by the schools and colleges it is quite conceivable that the characteristics of persons who are educable in this sense are more varied than are indicated by previous studies where the objectives of the schools and colleges are so narrow and the requirements of school and college education are so largely those of a verbal sort. . . .

"Not only do our present schools and colleges fail to aim at a broad set of ends, but they also are inadequate with respect to means. For example, the medium of communication and of expression in the schools is very largely a verbal one. Although most educators recognize the existence of a wide range of media of communication including pictures, diagrams, motion pictures, radio and other auditory materials, as well as concrete experiences in laboratory, shop, and in the community, the typical American school makes little use of these non-verbal means of communication.

"If the schools used a wider range of media of communication, we should find many persons more educable than now seems true because we should have more avenues for communicating with them and more avenues of expression by which they may demonstrate their learning and continue practice until the learning is more adequate. The broadening of the media of communication and expression used in schools and colleges should make it possible to identify wider ranges of talent which the school could work with effectively. This would then extend our concept of educability."—RALPH W. TYLER, *Professor of Education, University of Chicago,* at the Centennial Meeting of the American Association for the Advancement of Science, at Chicago, September 17, 1948.

Current Materials and the Curriculum

By LUCIEN KINNEY
KATHARINE DRESDEN

An ever-present problem for teachers is that of capitalizing on the immediate interests of pupils to give greater vitality to daily class-work. A coöperative project designed to achieve this through the use of current materials as a partial substitute for text-books has been under way for about two years in California. The participating teachers are now known as the California Council for the Improvement of Instruction. Some rather enthusiastic reports on certain phases of the innovation were published last year in the Journal.

The program, originated under the sponsorship of the State Department of Education, was given assistance by some national news magazines. Dr. Lucien B. Kinney and Dr. Reginald Bell served as consultants and coordinators for the group of participating teachers. Dr. Kinney's compilation of the experiences in various fields of subject-matter, and his tentative evaluation of the results thus far achieved have some very challenging implications for all secondary teachers. Dr. Kinney is Professor of Education at Stanford University, and is nationally known for his writings on the teaching of mathematics. Katharine Dresden is assistant to Dr. Kinney at Stanford and edits the biweekly News Letter for the Council.

IT IS a basic assumption of our American way of life that all citizens have access to information regarding current affairs; that they are competent to form intelligent opinions on current issues; and that, as a consequence, reasonable and intelligent decisions may be expected. To suppose, however, that such public intelligence will develop without explicit attention is incorrect. It is in recognition of this fact that the use of current materials has typified the best classes, not only in the social studies, but English, science, mathematics, and other subjects in the secondary curriculum as well. But while recognizing the importance and urgency of the problem, many teachers and administrators have hesitated from entering on a whole-hearted utilization of newspapers, periodicals, newsreels, radio, recordings, and other media from which the adult draws his information as to what goes on in the world. Questions of practical application must be answered:

What materials are usable and available? Where can they be obtained? For what courses and what topics are they suitable?

How are they to be used effectively? How does one introduce them to an inexperienced class? What activities are suitable for an experienced class? What administrative problems do they introduce, and how are they met?

How effective are the materials in promoting pupil achievement in regularly expected subject-matter outcomes? What other special results may one expect in the class?

THESE are questions which led to the organization of the California Council on Improvement of Instruction, and to which it has directed its efforts.

The Council has no officers and no dues. Its membership requirement is an interest in the improvement of instruction. It had its origin in the California Study on the Improvement of Instruction, organized in January 1946 to explore the possibilities in the classroom use of current materials, and to appraise their effectiveness, by members of the California State Department of Education, who secured the coöperation of *Time,* Inc., and brought in as consultants from the Stanford School of Education, Professors Reginald Bell and Lucien Kinney. The Study had two important outcomes. One was the demonstration of the values of the materials when they are skillfully used. The second was the unanimous decision of the participating teachers to organize permanently and continue the project. The organization was to be known as the California Council on Improvement of Instruction. The very informality of this organization has contributed to its vigorous life. The publishers *Time,* Inc., continued their interest in and assistance of the project, furnishing materials for intensive controlled experiments at selected schools and providing study materials and other services to all the participating schools. Professors Bell and Kinney continued as consultants from Stanford University.

The work of the Council has had two major aspects. All the classes are engaged in an exploration for new materials and better classroom procedures, including individual experimentation by classroom teachers with materials and tactics in which they were interested, as well as more formal study carried on at several schools to compare the results of teaching with extensive use of current materials with results from procedures without such materials.

The consultants are responsible for procedures to coördinate the work of the Council. These have included sectional conferences held occasionally at Stanford, Corona, and elsewhere, and annual general conferences: a biweekly *Newsletter,* edited at Stanford, to provide opportunity for exchange of ideas among the Council members, and visits to the coöperating schools by the Stanford consultants, to render assistance in the controlled experimentation, assist in exchanging information, and note effective procedures.

A REPORT has been prepared annually, outlining the activities and results of the project. A review of the materials in the June 1947 report convinced the Stanford consultants and the interested staff of *Time,* Inc., that the material had sufficient professional merit to justify its wide circulation. A condensation was, therefore, prepared and published in a 24-page brochure.[1] Thirty-five thousand copies of this brochure have been distributed to date to interested educators, including college and high school teachers and administrators in all parts of the world.

What goes on in the schools whose teachers are members of the Council? There are 22 schools, as follows:

Abraham Lincoln High School, San Jose
Bakersfield High School
Bonita Union High School, La Verne
Corona Union Senior High School
Delano High School
East Bakersfield High School
Fortuna Union High School
Hoover High School, San Diego
Kearny Junior-Senior High School, San Diego

1 Reginal Bell and Lucien Kinney. *Better Teaching Through the Use of Current Materials.* Stanford University Press, 1947.

Kern Avenue Junior High School, Los Angeles
La Jolla Junior-Senior High School
Lowell High School, San Francisco
McFarland High School
Monrovia-Arcadia-Duarte High School
Pittsburg Senior High School
Point Loma High School, San Diego
San Diego High School
San Jose High School
Santa Paula Union High School
Sequoia Union High School, Redwood City
Visalia Union High School
Woodrow Wilson Junior High School, San Diego

THE classroom activities are those which the teachers themselves consider interesting and important; they are as variable as the communities and geographic location. To gain a true picture of the Council activities, one must visit all 60 classrooms and observe the activities of the 7,000 pupils. But it is worth while to take a random sampling—let us look, first, at Fortuna, the northern outpost of the Council. As we enter the school, we note on every hand an interest in the current scene. Bulletin boards are in the classrooms, show cases have collections of illustrative indigenous materials, new books and periodicals are prominently displayed in the library; there is movie, radio, and recorder equipment. Thus, current materials and equipment are an integral part of the school and each class utilizes them for its particular subject or unit. Most classes, of course, have a basic text. But all classes use many sources of information besides the text. It is common practice to have classroom libraries or reserve shelves in the school library. Books are brought from home. Pamphlets are ordered as a part of class activity. Bulletin boards display current material not available otherwise, which often serve as the central theme of the unit.

STEP into Gladys Shulsen's English room: Miss Shulsen has something you have dreamed about, but never thought possible—enough bulletin board space. In fact, her bulletin board extends all the way around the room. Naturally, the more space you have, the more space must be filled. Sometimes a whole section is devoted to one subject; sometimes the materials will be selected by the teacher or pupils about a topic, in preparation for written or oral composition. Sometimes it will be background for a book being studied, as *The Robe.* Sometimes stimulating pictures, articles, cartoons, but always attractive, artistically arranged. A day of discussion on the material displayed is an excellent opportunity for extemporaneous speaking.

Miss Shulsen finds that current materials may provide opportunity for each pupil to contribute to the maximum of his capacity. Pupils may choose a topic for individual study and get their materials wherever they may be available. More and more the class is turning to the conversation type of report—two or three sitting down and visiting informally about the topic. Vocabulary building is developed through *Reader's Digest* techniques.

One expects to find current materials being used in a history class, but to Harry Kenworthy current events are where we are in history, that for which we need an historical background, the place from which we lead into the future. One or two days, as necessary, is spent each week on current discussion. A pupil is appointed to be responsible for each week's current presentation. He makes the assignment, draws up and posts questions based on the *Current Affairs Guide,* and presides over the class. Class is conducted as a discussion group with every effort to tie the discussion into the subject matter being studied.

RESPONSIBILITY for a good discussion rests upon the leader. At intervals, criteria are set up by the class, and the leaders are evaluated against them. When a second opportunity for leadership is given, progress is noted by the group. Pupils are encouraged to take notes during the discussion. To provide experience in note-taking, these notes are the basis for later discussions and recapitulations. Pupils keep their own scores, and frequently graph them, on the *Time Current Affairs* tests which are used to measure progress. This has proved to be a great incentive to more careful reading of subsequent assignments.

These are but two of the classrooms in which we would find the current emphasis in teaching. Visits to the science, art, and industrial arts classes would reveal the same point of view. In Mrs. Kenworthy's homemaking classes we would find her shelves crowded with pamphlet releases from government agencies and private concerns. Her pupils discuss, dramatize, and produce such telling results that they are called upon by other classes, school assemblies, and community groups.

MEMBERS of the Council have been keenly conscious of the communities in which they are located. They realize that they have a double responsibility—one of drawing upon community resources to enrich the offerings in the schools, and the other of keeping the community informed of what the school is doing. We could observe examples of these activities in San Diego, Santa Paula, East Bakersfield, San Jose, or other Council classrooms. Let us see illustrations of these activities which are found in the Corona schools. W. D. Addison teaches five classes of 160 sophomores and juniors in World History and United States History. Part of each week is devoted to current topics. One of the class activities last year was a project to develop chairmen. The chairmanship of the discussion group rotated from week to week, criteria were set up, and the chairmen were evaluated against the criteria by their fellow classmates.

The culminating activity of the projects was in the nature of a contest, through an invitation received from the Toastmaster's Club for representatives of the class to appear before them at one of their regular programs. Each pupil to enter submitted an outline of his talk with a bibliography. Under a series of chairmen, the talks were given before the classes and the best were selected by their classmates for the next round. After further selection, four finalists and the chairman for the Toastmaster's Club were chosen.

Quite aside from the obvious values of such an experience, important attitudes were developed both in the classroom and community. A vital attitude is that "we" feeling that the pupil has with the community when his business leaders, church leaders, and city officials sit and listen seriously to his views. He develops a feeling that his school is dealing in the realities of life as it is lived beyond the ivory tower. On the other hand, there are the appreciations developed in the community for the education provided by today's schools. Through such genuine experiences, rather than through argument and appeal, the public comes to realize that the school of today is an institution worthy of its support.

WHILE we should like to stop for a visit to Hazel Hyatt's English classes, where group conversational techniques are being explored, or see the expert use of audio-visual aids in Mr. Slattery's science classes, we must move from Corona to the Bay Area. At Sequoia High School, in Redwood City, we should not fail to note the effective

use of materials resulting from the cooperation of the librarian, and the plan for administering the materials. Back files of most current magazines are available; the pupils are trained in the use of the *Reader's Guide*; classroom libraries are made up and moved from the library into the classroom. Large bins, constructed by the manual arts department, contain pictures on every subject accumulated over the years by clipping magazines mounted and catalogued. Also in the library are the radios, players, wire recorders, and records to be checked out with cards just as the books are checked out; to be checked in and kept in condition by library assistants just as the library books are checked in and kept in condition. Anne Bigler's biology laboratory contains an abundance of advertisements, files of *Life, Science Digest, Science Illustrated, Nature, Hygeia, Natural History,* pamphlets, pictures brought in by pupils who have caught the interest in things scientific. These materials are necessary to serve as basis for the activities of the class. In a unit on "Insects," for example, the following presentations were planned and carried out by three different groups in the same class:

GROUP A, on *Insects and Diseases,* used the discussion method which had been demonstrated and explained by Helen Schrader and a Stanford group several weeks before. This group had an artistic member who drew a good likeness of Lazear for the bulletin board; other members made large sketches of such insects as flies, mosquitoes, and lice.

Group B, on *Useful Insects,* used the sociodrama technique. The leader described a dream, in which some fierce-looking insect would appear to frighten her; the insect would win her over by showing how truly harmless to man it was and how, in reality, it befriended man.

Group C, on *Difficulties of Studying Insects,* must have had a member who enjoyed the Dr. I. Q. program. A member would give facts in the life of an insect to see how soon the contestants (members of the class) could name the animal. They were limited to 10 clues; these were to proceed from more abstract to more concrete statements. Points decreasing in number were given according as the insect was named after a specific clue. (After Clue I, 20; Clue II, 18, etc.)

A VISIT to Miss Watkins' journalism classes, Miss Philbrick's science classes, or Don Cherry's social studies classes, would find the same emphasis on the current scene, with different approaches but with equal effectiveness. Don Cherry, for example, has been exploring and experimenting in the area of attitudes toward current problems, using the objective procedure, "What do you think, and why?" He has been less concerned with the measurement aspect than with the development of critical thinking which his procedure stimulates.

These brief descriptions are not intended as presentations of classroom procedures, but rather as glimpses into the classes to gain an idea of what is going on. Though the procedures vary widely, we find in the classes a common recognition of the fact that social and technical achievements of the past, the great literature, and recorded history have little meaning except as they relate to the present.

Now that it is entering on its third year of activity, what can we say as to the values of the Council? It has obviously established a new and unique pattern for coöperation between the schools and the teacher education institutions, greatly to the advantage of both. It has established the value of a vast resource of teaching materials not hitherto avail-

able to the schools, because not systematically studied. It has demonstrated an effective procedure for developing intelligence and understanding of current affairs needed for democratic citizenship.

BUT of equal importance, perhaps, has been the emphasis on classroom "tactics" which are necessary for effective teaching, and the pattern of cooperative experimentation devised to study them. A review of the Council reports will reveal that these run the gamut of classroom procedures required of the skilled teacher, whether using current materials or not. The Council constitutes a long-needed laboratory for developing such teaching skills. A book on the classroom use of current materials, coöperatively prepared by the Council, is to appear in the spring. Just how do you go about the practical details of introducing a class to the use of current materials? How adjust to individual differences? How plan and direct class discussions? How use the bulletin board, the radio, and other materials? How handle the multitude of other details which, unimportant in themselves, add up to expert teaching? The answers to these questions can come only from the classroom teachers. They are the only ones who can answer the question, "Will it work?"

Staff Changes at U. C. L. A.

The following promotions and appointments have been made within the faculty of the School of Education at the University of California, Los Angeles:

Dr. John A. Hockett and Dr. Flaud C. Wooton have been promoted from Associate Professors to Professors of Education; Dr. F. Dean McClusky from Lecturer in Visual Education to Associate Professor of Education; Corrine A. Seeds from Assistant Professor to Associate Professor of Education; Dr. Aubrey L. Berry, Teacher Placement Executive at U. C. L. A., was appointed Assistant Professor of Education and Educational Counselor.

Dr. David G. Ryans, formerly Director of National Committee on Teacher Examinations of the American Council on Education, New York City, was appointed Associate Professor of Education; Dr. Evan R. Keislar, formerly Assistant Professor of Education at Tufts College, Medford, Massachusetts, was appointed Assistant Professor of Education; Dr. Wilbur H. Dutton, formerly Director and Professor of Education at Whittier College, Whittier, California, was appointed Assistant Professor of Education and Associate Director of Training.

Dr. Howard A. Campion, Assistant Superintendent of Los Angeles Schools, in charge of adult and vocational education, was appointed Lecturer in Education, part time; Dr. Percy R. Davis, recently Superintendent of Schools at Santa Monica, California, was appointed Lecturer in Educational Administration, part time; Dr. Clarence S. Marsh, formerly with the American Council on Education will serve as Lecturer in Education the fall semester during sabbatical leave of Dr. Frederic P. Woellner; and Dr. Francis L. Bacon will join the faculty in February, 1949, as Lecturer in Secondary Education.

Experiment in Written Communication

By EDMUND J. ROBINS

Although a rose by any other name may smell as sweet, it is also true that a new dress may attract attention where there was former indifference. This article suggests that a new name and a new dress may give new appeal to that dimly viewed wallflower familiarly known as English composition.

As a matter of fact the new approach described by Mr. Robins is more fundamental than has just been implied. The problem he faced is a familiar one. Many students go out from High School convinced that they can not learn to write acceptable school English. The memory of their futile efforts which brought only despair to a series of earnest teachers makes them averse to further trial.

It was such a group which Mr. Robins found enrolled in a class in the San Bernardino Valley College. His account of what was done and what came out of it carries a hopeful note.

WERE it not that considerable interest has been directed toward the Laboratory in Written Communication at San Bernardino Valley College, I should hesitate to discuss the course. It is still definitely experimental, and we have reached no objective conclusions concerning its value. Also, it is new only to the extent that we have developed the course to suit the needs of our particular students in our particular set-up. It is a young relative of the Minnesota Writing Laboratory, a cousin to the Denver Writing Clinic, and a legitimate offspring of a tutorial course which we had designed earlier and carried through successfully for some years for the service men at the local naval hospital.

Students who have failed the English Placement Test are expected to take a make-up course (comparable to the Subject A of the University of California) before being permitted to enroll in standard college composition. The course is a conventional presentation of grammar, sentence construction, and allied material. Failure in the course has been distressingly high, and the suggestion has been made that we encourage failure by our emphasis on the "seven deadly sins" of writing, by removing written communication from any relationship to the students' extra-school experience, and by urging correctness at the expense of ease, originality, and thought. Our present laboratory course is an experiment to determine whether, with methods divorced from grammatical terms and generally conventional classes, we can change the emphasis to thought-content and ease of expression with correctness as an additional result.

Physically, the laboratory in written communication is a pleasantly light room painted in pastel greens, with a blackboard in front, a long bulletin board along one wall, and a locker at the back in which to keep filed the students' folders. Each student has a separate table, the tables being arranged to facilitate the instructor's moving from student to student. But tables are not assigned. Ease is desired rather than

the formality of the usual classroom. Dictionaries and other reference books in variety are available on the students' tables and also at the front and rear of the room, as the students move about as they choose.

THE class meets three times a week in laboratory periods of two hours in length. Early in the semester each student is given a manila folder in which he keeps, in chronological order, the work which he produces during the semester.

There is no general assignment. Each student is encouraged to write what is of interest to himself, and written assignments for other courses, upon agreement with the other instructors, are considered legitimate projects. Hence, in one section at one time, two students were working on term papers for history and geology, two were preparing copy for a newspaper-like program for the school play, a fifth was exposing the foibles of pet owners whom he had met as assistant to a veterinarian, a sixth was refuting an article in a local newspaper which had annoyed him, and so on. Occasionally, it is necessary to provide some one student with a topic, usually simply by discussing his interests with him and expressing a desire to learn more about some idea or experience or craft he has mentioned. Editorials, columns, news items, and articles from newspapers and magazines, posted on the bulletin board daily, have proved themselves useful by stimulating many of the students to write thoughtful comments. Most of the students have more than enough subjects to write about.

There is no specific text, although two instructors experimented, apparently successfully, with single issues of the *Saturday Evening Post* for representative models. Students use the reference books available in the laboratory. The following ones have proved especially valuable: Perrin's *A Writer's Guide and Index to English*, Roget's *Thesaurus*, Funk and Wagnall's *New College Standard Dictionary*, the *Winston Encyclopedic Dictionary*, the *Columbia Encyclopedia*, Webster's *New International Dictionary*, Webster's *Biographical Dictionary*, Webster's *Dictionary of Synonyms*, and the various handbooks which are used in the other English courses. We are adding this coming year the new *Harper's Dictionary*.

THE instructor goes over each completed paper individually with its author. Typical errors are listed on a sheet which is inserted in the student's folder, and instructor and student compare regularly the current written work and the original check sheet to determine the student's progress in avoiding a repetition of errors. A corrected list of misspelled words for constant reference is also included in the folder.

The only general teaching is incidental. If a number of students have exhibited the same difficulty, it is time-saving for the instructor to take up, say, spelling rules with the entire class. Otherwise, instruction is tutorial, with the student being guided to whatever available handbook will best aid him in his particular problem.

Although there is no outside preparation, the student, by concentrating within the classroom for six hours per week, rather than the usual three, earns three nontransfer units of credit per semester. As the course runs through the year, a student who successfully completes both semesters may earn the requisite six units in English for graduation.

THE final examination in the course (used only in part to determine the final grade) is the same one used in the conventional remedial course, the purpose being to evaluate the efficacy of the two methods. Results for the whole groups have been similar. Checking the specific students, we seem to find that the retarded students and the superior students benefit greatly by the laboratory course. The average student does about equally well in both courses. The indolent student—retarded, average, or superior—wastes both his own time and that of the other students in the laboratory course, whereas the conventional course, with its specific, regularly checked assignments, appears to force him into activity.

Were the students to be faced with the usual objective examination, based on the rules of grammar, sentence construction, and the like, it is probable that the laboratory students would fall far below the students in the conventional class. However, in our examination, based on the end-product of communicating clearly, correctly, and effectively in writing, the laboratory students definitely hold their own with, although thus far there is no indication that they do better than the other students. They do appear to acquire a greater fluency. Writing apparently becomes more natural to them.

The greatest immediate value observable in the laboratory course is in the attitude of the students. The organization is such that every student recognizes the fact that the instructor is interested in the individual student and that student's own problems. Hence, there is none of the resentment which sometimes appears in the conventional course. The students accept the instructor, not as an antagonist, but as a knowledgeful equal and helpful friend—an attitude which in itself recommends the course to consideration.

Future Teachers of America

There are now chapters of Future Teachers of America in some two hundred colleges and universities. The FTA chapter is the counterpart of the local teachers' association and its members are junior members of the great state and national associations which will serve them throughout their professional lives. FTA chapters this year are larger and more active than ever before. A number of state education associations are now working toward the goal of an FTA *chapter* in every college or university which prepares teachers and an FTA *club* in every high school where there are students expecting to become teachers. FTA specializes in training for professional and civic leadership. The growth of Future Teachers of America will go far in aiding teacher recruitment and in meeting the need for a more definite and richer type of professional training for those who plan to make teaching their lifework. Write National Committee, FTA, at NEA headquarters for further information.—*NEA News.*

San Diego County Schools' New Curriculum Laboratory

By FRANCIS L. DRAG

One of the most serious difficulties encountered by the teacher who wishes to vitalize the curriculum by the use of more stimulating materials is the lack of a convenient source of such helps and of time to make an extended search for them. The San Diego County School Services, under the direction of Superintendent John S. Carroll, have met this need in the unique manner described in this article. It suggests a plan which could be profitably adapted to other localities in ways extremely helpful to committees or individual teachers.

The author, Dr. Francis L. Drag, is well known to California teachers. He served for a time in the State Department of Education, and has directed work-shops dealing with the curriculum. His doctor's degree was earned at Stanford University, and he has been, since 1943, Curriculum Director for the San Diego County Schools. He was assisted in preparing this article by Burton C. Tiffany, Curriculum Coördinator for the same county.

TO understand the organization and operation of the curriculum laboratory in the San Diego County Schools Service Center, a brief statement of the assumptions underlying the program and its historical development is necessary.

Basic to the educational service, emanating from the Office of the Superintendent of Schools in San Diego County to the 69 districts and some 1,200 teachers, are three pervading concepts of curriculum development.

CONCEPT OF SERVICE

The first of these is the concept of service—the functions, the activities involving the utilization of human or material resources of the County Office by the districts are provided on the basis of needs expressed or services requested. Such needs and services are the result of communication between the County Office and teachers, administrators, trustees, and lay people. Through close coördination with the Association of San Diego County School Administrators, the San Diego County Teachers' Association, the Ninth District Parent-Teachers' Association, the San Diego County Trustees' Association, as well as teachers' clubs and other professional and lay groups, the program of desired services has been developed.

CONCEPT OF PARTICIPATION

A second major concept basic to the program is that of participation. The curriculum, the course of study, the instructional program, are considered to be sound to the extent only that those who are responsible for the activities of children in classrooms have a primary responsibility in the building of the curriculum. Thus, teachers become the primary agents in curriculum improvement. The program of educational service is built around the voluntary participation of teachers as well as administrators and others in curriculum activities.

CONCEPT OF UNITY

The third concept is that of unity—unity as to purpose and goals, rather than uniformity with regard to specific practice and curricular endeavor.

Through coöperative participation in curriculum development, unity is fostered. Indirectly, this concept is strengthened by the constant effort being made to improve communication between individuals and groups concerned with the curriculum.

EQUALIZATION OF EDUCATIONAL OPPORTUNITY

Fundamental in the relationship of the Office of the Superintendent of Schools to the districts in the County is the principle of equalization of educational opportunity. From the very beginning of the present program this principle has underlain all activities emanating from the County Office. It has been greatly stimulated as the result of the recent basic statutory provision by the state legislature for the County School Service Fund which amounts to $3.00 per pupil in average daily attendance.

HISTORY OF CURRICULUM LABORATORY

The current program of curriculum development in San Diego County had its beginning in 1940 with the appointment for the first time of a secondary curriculum coördinator in the Office of the Superintendent of Schools, San Diego County. One of the first steps taken by Dr. John S. Carroll, then the secondary curriculum coördinator, was to establish for the secondary schools a sample library or "curriculum laboratory" of teaching materials such as textbooks, work books, and course-of-study materials. Related to this service was the publication of a guide to curriculum materials.[1] This curriculum monograph listed the titles, sources, and prices of hundreds of free or inexpensive curriculum bulletins, monographs, and guides to curriculum construction. These were collected in the curriculum files of the secondary coördinator and became the core of the materials collection later to become a part of the San Diego County Schools Curriculum Laboratory.

As a part of the total secondary curriculum development program, a series of county curriculum committees was projected to cover twelve major subject areas within secondary education. Each of these committees was organized with a county school administrator as administrative advisor and a department head or teacher as chairman. Committee membership was composed of "key" teachers from each school who represented teachers concerned with the particular subject area being studied.

The early program operated for a period of two years, from July 1940 to June 1942, and although discontinued for a brief period, set the pattern for the renewed program of curriculum development beginning in January 1943, when Dr. Carroll became the County Superintendent of Schools. The election of the new superintendent carried an educational platform, sponsored by the administrators of the County Schools, which called for increased educational service from the County Office through an integrated, democratic program of curriculum coördination and supervision.

As a result of this county-wide planning, in July 1943 the staff of the curriculum department was augmented by two curriculum coördinators, one serving elementary schools and the other secondary schools. The physical education supervisor for rural schools became a general supervisor serving rural schools, while the supervisor of music for rural schools continued to serve in that capacity. At this time the curriculum coördination staff, with two curriculum assistants, assumed responsibility for the continuation of curriculum services begun in 1940. The first

[1] *Compilation of Sources of Curriculum Materials.* Volume II, Number 62. San Diego: Office of the Superintendent of Schools, San Diego County, 1942. (Mimeographed.)

effort was directed toward bringing up to date the collection of materials originally obtained by the curriculum coordinator and the cataloguing and cross-referencing of such materials. In addition, careful selections were made from numerous sources and bibliographies in order to develop further a library of the best professional books relating to curriculum study. "Fugitive" materials were filed under appropriate subject headings in standard file boxes.

From 1943 to 1947 major effort was made not only in extending, amplifying, and enlarging the services of a curriculum nature to the schools through an augmented staff, but also in developing facilities and materials for use in rendering service. Curricular services were defined as those activities which are directly concerned with the development of the curriculum program in the County. These include such categories as curriculum planning, curriculum building, supervision of instruction, the improvement of in-service programs, the coördination of curricula in the various subject areas, special education, audio-visual service, library service, guidance-attendance service, health education, and industrial arts education. These services have available the resources of the curriculum laboratory.

NEEDS DETERMINE LABORATORY

In the development of the curriculum laboratory, these resources have been provided on the theory that services to be rendered and the functions to be performed are the determinants of the laboratory. Services, in turn, are determined by the philosophy of education herein described. It is a dynamic philosophy and it involves the following curriculum guide lines:

1. The program should be centered in the immediate needs of pupils, teachers, and community members.
2. The program should be one of continuous development.
3. The program, being focused upon immediate needs, will not assume, therefore, identical forms in several areas of the County.
4. The program should afford opportunity for those who use the curriculum—teachers, pupils, administrators—to assume major responsibilities in its making.

With these principles in mind, the Superintendent of Schools for San Diego County, with the ever-important counsel of administrators and teachers, expanded and refined the Curriculum Laboratory Service. In this relation, the curriculum director was given the responsibility for directing a study of curriculum laboratory functions and resources throughout the United States.[2] As a result of this study, plans and projects emerged for the program in San Diego County. And, finally, more than 30,000 feet of floor space in a remodeled county building was assigned by the County Board of Supervisors for use as a Service Center in which was located the Curriculum Laboratory.

In these quarters, now designated as the San Diego County Schools Service Center, are housed the staff and curriculum materials comprising most of the Curricular Services, including the Schools Library, the Audio-Visual Library, offices, conference rooms, workshop facilities, and the collection of resource materials which constitute the heart of the Curriculum Laboratory.

RESOURCES AVAILABLE

Curriculum laboratory resources currently available include personnel, material, equipment, and facilities. The staff includes coördinators, consultants, librarians, and technicians. The coördi-

[2] *Curriculum Laboratories in the United States*, Education Monograph No. 15. San Diego: Office of the Superintendent of Schools, San Diego County, September, 1947.

nators work in the following fields: audio-visual; elementary and secondary; guidance attendance; health, physical education, and recreation; music; science; special education; and vocational and industrial arts.

The Service Center serves as "home base" for the curricular service members of the County Superintendent's staff. It can be compared with a medical office and clinic. Each staff member has his own office and the necessary "tools" to perform his professional activities. He is available to render desired assistance. Research, writing, previewing, evaluating, and construction are carried on, either alone or in coöperation with teachers, administrators, or other coordinators. Material is selected to meet the needs of a specific teacher. Thus, a small group of teachers may work with a coördinator in developing an English unit for freshmen, while the science and health teachers from one school meet with the Science Coördinator and the Coördinator of Health, Physical Education, and Recreation to develop an integrated program for junior high school students.

Materials included in the Curriculum Laboratory Library are in addition to those found in the Audio-Visual Library and the Schools Library and are primarily concerned with curriculum development. They include such professional materials as books, periodicals, yearbooks, indexes; curriculum materials such as courses of study, guides, and bulletins; children's materials, including textbooks, worksheets, magazines, newspapers; teacher-prepared aids; testing and evaluating materials, including sample tests and guides; audio-visual display materials of the following classes and types: manipulative, experimental, demonstration, exhibit, and construction; resource and enrichment materials pertaining to the basic human needs and related social, economic, and political problems.

The Service Center facilities provide, in addition to the Curriculum Library, the Audio-Visual Library, and Schools Library, offices for staff members, conference rooms, research rooms and facilities, listening rooms, viewing rooms, hearing and testing facilities, kitchen facilities, science workshop, general workshop for skill subjects and industrial arts, assembly and projection rooms, photography rooms, repair rooms, and sound studio.

EXTENT OF USE OF SERVICE CENTER

Although the Service Center was occupied during October of 1947, various phases of construction continued throughout the year and changes and additions will probably continue to be made as there are new developments in education and as funds are made available for essential improvements.

November, 1947, was the first full month of operation and attendance at Service Center meetings during that month was 779. During the year, educational groups secured a better understanding of the potential uses of the Service Center and attendance increased each month, reaching a high of 1,892 during May, with 54 groups meeting. The groups varied in size from 6 to 226. The largest group was one which met for a county-wide health institute held in coöperation with San Diego State College and the State Department of Education.

GROUPS SERVED

Many types of groups use the Service Center. There are those which can be classified as strictly professional, such as curriculum committees, teachers' clubs, county staff, administrators' association, teachers' association, and school faculties. Groups of students—elementary, secondary, and college—also benefit

from meetings in the Center. A third type of group is composed of educators *and* those outside of the profession whose work is closely related to education or who have a special interest in education, such as Parent-Teachers' Association, service club and county education committees, Trustees' Association, and Health Services' Coordinating Committee. A fourth grouping would include those not considering school problems directly, such as County Employees' Association, San Diego County Farm Bureau, and the Film Council of America.

Many individuals, as well as groups, use the Service Center to meet their needs. For example, the Curriculum Library will provide a teacher of a course in Social Living an opportunity to examine course of study materials from all parts of the United States as well as pertinent pamphlet materials. A mathematics instructor can select a new text from a large sample text collection. An administrator, realizing the need to reorganize the curriculum in his school, finds available many professional books, current and bound periodicals, and reference books which give him suggestions on staff organization for curriculum development.

In the audio-visual department, there is available a preview room to use in evaluating and selecting films for classroom showing, two small listening rooms which provide quiet surroundings in which to hear recordings, a teachers' workroom where one can check listings of materials and prepare tentative orders, and a sound studio for making recordings or hearing radio broadcasts. There is available a technical coördinator and a variety of audio-visual equipment to provide opportunity for learning how to operate the machines available to the teacher. Materials available in the audio-visual section include 1,100 films, 2,000 film strips and slides, 2,100 records and transcriptions, 75,000 study prints, 600 wall pictures, and 125 dioramas.

A science laboratory is used to try out experiments, to prepare classroom materials, and to select materials to be circulated to the school. It serves as a natural environment for the meeting of the weekly in-service class in science conducted by the science coördinator in coöperation with State College. It is equipped to supply student groups as well as teacher groups with interesting worth-while educational experiences.

The general workshop is a place where teachers of all subjects secure experience in many types of manipulative activities. Work benches, power and hand tools, wood, leather, metal, construction paper, oak tag, duplicating machines and many other types of equipment and material supply teachers with the media necessary to plan and prepare for industrial arts and fine arts activities as they relate to the various subject fields. Specialists in ceramics, plastics, and lapidary work have been brought in to augment the County staff in giving instruction in special areas. The workshop is open most evenings and Saturdays for interested teachers to use. An instructor is available to assist them.

The Schools Library has professional materials which circulate to elementary and secondary teachers and administrators, but classroom books at present are available to contracting elementary schools only.

Delivery of materials and equipment is made to each school in the County once each week. This means that a teacher could prepare an order on Saturday at the Service Center and be sure of having it delivered no later than the following Friday. This is a rather ambitious program when it is realized that San Diego County is approximately as large as the State of Connecticut. How-

ever, for the most effective classroom instruction, the right material must be at the right place at the right time. The weekly delivery is one further step toward equalization of educational opportunity for rural areas.

TYPICAL CONFERENCES

Four conference rooms are available in addition to a number of work areas. The largest room seats almost 225; the next, approximately 100; the third about 35; and the fourth from 6 to 8. The fourth is for small committee meetings. A few examples of how the meeting places are used will help visualize the functioning of the Service Center.

The Annual Rural Conference, planned in coöperation with San Diego State College, drew a crowd slightly in excess of 200 teachers and administrators from the smaller elementary and secondary schools for a one-day session. The general meeting in the morning was held in the largest conference room. Following this, ten section meetings were held with each section exploring one aspect of community resources; industries, the arts, welfare agencies, press and radio, natural and physical science resources, and recreation. It was possible to arrange ten meeting places for groups ranging up to 30 in size. During the section meetings, tables were set up in the largest conference room and lunch was catered to 175, using the kitchen which is available for keeping the food warm.

An art curriculum committee meeting indicates how the resources of the Service Center can be brought into play readily and effectively. A display of modern art was placed on the bulletin board and discussed by the group. Course of study and sample text materials were exhibited on tables around the room. The curriculum librarian pointed out types of resource material available in the Curriculum Library. The Coördinator of Audio-Visual Services presented the film, "How to Make a Mural." The industrial arts coördinator directed a one-hour session in the workshop, where members of the group constructed materials to use in classes working on modern design. It is apparent that services and facilities of the Center provide the opportunity for a variety of activities.

The Service Center is a meeting place for students. An interesting and valuable conference of student body officers from the high schools in the County was held this last year. It was a "jam" session to discuss mutual problems and show ways of carrying on student activities. In one section the representative students from each high school were thinking through the part that students should have in planning assembly programs. Is this a faculty function? Student function? A coöperative function? Another group was describing present practice in selecting cheer leaders. New and better ways of financing student activities were receiving attention in another group. The Center provides a place for students to meet fellow students from all parts of the County, to make new friends, and to participate in democratic group discussion. Students have met in the Service Center to plan " 'Teen Town" at the County Fair, to make plans for attending the Pacific Coast UNESCO conference in San Francisco, to record and listen to their voices as part of a course in speech, and to carry on many other activities.

ORIENTATION TOURS

The foregoing descriptions are illustrative of the ways pupils and teachers have used the Service Center so far. All possibilities have not been explored and it is anticipated that more extensive use will be made of this curriculum laboratory. The groundwork for this in-

creased activity has been laid through helping people interested in education become acquainted with the facilities and services. Many tours have been conducted through the Service Center during the first year of its operation. These have included:

1. Local teachers' groups desiring to learn the organization and procedure of processing requests from schools and how to make maximum use of the resources available.
2. Lay groups interested in finding out the educational services provided children of the County through the County Office.
3. Public officials—County supervisors, State legislators, State Department of Education staff members, and others—wanting to learn how the tax dollar is being used effectively in equalizing educational services.
4. State college students—potential teachers in San Diego—anxious to ascertain the materials and services available and the procedure for securing them.
5. Educators, outside of San Diego County, wanting to share ways and means of meeting the needs of schools.

CURRICULUM DEVELOPMENT FACILITIES

The combination of human, physical, and material resources in the Service Center contributes to the optimum use of the facilities as well as to the in-service growth of teachers and administrators in the County. By having readily available, in one building, the personnel, materials, and equipment of the County Office, not only is there increased effectiveness, but also increased efficiency. In one visit many needs can be met.

Thus, County Schools Service Center is facilitating the curriculum development in San Diego County and is furthering the ideal of equalization of educational opportunity through the county level of educational service.

Notice to Test Users

The following announcement, included in this issue of the JOURNAL at the request of the World Book Company, is printed because the same reminder applies appropriately to similar materials often requested by teachers from other publishers. Most reliable test publishers require some information regarding the professional standing or qualifications of the prospective purchaser of tests for the reasons noted in the following statement of policy:

World Book Company's standardized tests are precision instruments devised for specific purposes and, if a test is to be of full value, previous knowledge of its contents by the person taking it should not be available.

Therefore, in the interests of the many users of its tests, World Book Company has established a policy that all possible care will be exercised in distributing tests to prevent their falling into the hands of persons who would use them in such a way as to make the test results invalid.

For this reason, it is requested that teachers or others ordering tests, or inquiring about tests, kindly give explicit information as to the name of the school, school system, and official position, and the use to be made of the tests.—World Book Company, 121 Second Street, San Francisco 5, California.

What About Geography?

By CHESTER F. COLE
DAVID PONTIUS

One of the results of the war and the world-wide crises that have followed has been an unprecedented interest in world-geography. There is now an eager curiosity regarding the location, political status, and economic importance of areas formerly ignored as having no concern for us. How far has this change been recognized in our secondary schools?

An inquiry to ascertain the present status of geography in the schools was authorized by the California Council of Geography Teachers last December. Chester F. Cole, Assistant Professor of Geography at the Fresno State College, directed the survey, assisted by David Pontius, a graduate assistant in the same college. The results of the survey were presented to the Council in June, 1948, in a paper read by Mr. Pontius. This article, based upon that report, suggests a query as to how well the curriculum is keeping abreast of the changing demand for global information.

TO what extent has geography become an accepted feature of the curriculum in the secondary schools of California? A survey conducted by the authors in the spring of 1948, under authorization of the California Council of Geography Teachers, undertook to find the answer. In presenting the data thus obtained, attention should be called to the diversity of organizational plans in the State, particularly in regard to the seventh and eighth grades. In preparing the questionnaire, it was recognized that these grades were classed as elementary in some districts and as secondary in others. Consequently, an attempt was made in the survey to take these differences into account so as to obtain comparable data and thus be able to derive valid and representative conclusions.

The questionnaire, however, could not escape the fact entirely that some elementary schools may have only six years of instruction while other schools may provide as much as eight. Most of the secondary schools of the State are either junior high schools or senior high schools, and, because of differences among local school situations, may include anything from the seventh to twelfth grades. The data received from four-year high schools, where that situation existed, were included statistically with the senior high school data. This overlap in grades of the schools must be kept in mind when evaluating the importance of the statistics derived for each of the three school groups.

All of the material returned was subjected to statistical analysis. The compilation of results was based only upon the information received from the schools that returned questionnaires. When a percentage value was given to a specific question, the percentage was calculated on the number of answers received for that question. This was necessary because many of the questionnaires were incompletely answered. Where there were not enough answers to any one question, or where the percentages indicated unreliable information, that question was either discarded or minimized as to its value in this report. An attempt was made, therefore, to use only those

questions that proved themselves valid and thus would probably be representative of the entire elementary and secondary school situation regarding geography. Any additional analysis was considered to be beyond the purpose and scope of the survey.

The questionnaires used were formulated so that there would be the maximum number of returns. A long and complicated questionnaire would have reduced the number of returns to the point where the information returned would not have been representative of the entire school situation. The questionnaires used were, therefore, somewhat limited, both as to length and detail. They did seem to answer the purpose quite well for the general information requested, although the answers to the few detailed and lengthy questions were somewhat irregular and inaccurate.

THE elementary school situation was surveyed somewhat differently than the secondary schools. It was not considered physically feasible to send a questionnaire to each elementary school. Instead, a questionnaire was send to each of the 58 county superintendents of schools in California. Individual questionnaires were sent to each of the junior, senior, and four-year high schools in the State.

There was a 58 per cent return from the county superintendents of schools, representing 1,629 elementary schools. Seventy-one per cent of the junior high school questionnaires that were sent out were returned, representing 109 schools. Forty-eight per cent of the senior high school questionnaires sent out were returned, representing 210 schools. This percentage of return was deemed adequate to provide a fairly representative and accurate analysis.

GEOGRAPHY was indicated as being taught as a part of the social studies program, and not as a separate subject, by 1,218 of the elementary schools, or 74.5 per cent of all the elementary schools answering the question, by 91 per cent of the junior high schools answering the question, and by 68 per cent of the senior high schools answering the question.

This information was important merely on the basis of percentages, since it indicated that in order to determine the status of geography in many of the schools it was necessary to determine its position or importance *within* the social studies course.

This was attempted on the basis of the training that the social studies teachers had in geography, and upon an examination of a limited number of elementary and high school curricula.

In the elementary schools 58 per cent of the county superintendents who answered the questions on teacher training returned reports indicating that their social studies teachers were inadequately prepared in geography, and, conversely, 42 per cent indicated adequate training in geography on the part of their social studies teachers.

At the same time, in answer to another question, 94 per cent of the superintendents indicated their social studies teachers needed more preparation in geography. This apparently indicates that while many teachers are doing an adequate job, they could be doing a much more satisfactory job.

A similar situation occurs in both the junior and senior high schools. A desire for their social studies teachers to have more training in geography was indicated by 81.4 per cent of the returns from the junior high schools and 88.7 per cent of the senior high schools on that question.

IT is interesting to note that 18.14 per cent of the junior high schools answering the question did not desire additional training of those teachers who were teaching geography. This seemingly high percentage may be partially explained, perhaps, by the fact that there were a large number of teachers trained in geography in the junior high schools. Of the 73 junior high schools who answered this question, there were 10 teachers who had M. A. degrees in geography, and 105 had either majored or minored in the subject while in college. Furthermore, there were only 38 teachers who had received some geography training and who were not teaching geography.

In the case of the senior high schools who answered this question (99 schools), we found that the teachers teaching geography had nearly one-half the training possessed by junior high school geography teachers.

It should be pointed out that the statistics on the amount of training the teachers have received are likely to present a distorted picture since this particular question was incompletely answered.

An examination of the curricula of all schools covered by the survey indicated that there was great variation in the amount of geography taught in the social studies course, widely diverging concepts of geography, and differing opinions, with respect to the relative importance of various phases of geography.

Geography is offered as a separate subject in 17.8 per cent of the elementary schools answering the question, and where it is taught separately this practice is followed in practically all the grades, and not in just the last two years.

In the junior high schools, geography is taught as a separate subject in only 18.2 per cent of the schools. Thirty-two per cent of the returns from the junior high schools favored teaching geography separately. This statistical relationship seems to imply that most school administrations do not favor teaching geography as a separate subject.

In the senior high schools, 30 per cent of those reporting said geography was taught as a separate subject. However, the same schools were evenly divided in opinion as to whether or not they wanted geography taught as a separate subject. The implication is that school administrators do not favor separate geography courses.

Geography, where taught as a separate course in the junior high schools and based upon the number of courses being taught, consists mostly of world or global geography. Physical geography is taught almost as often, and economic and commercial geography, as well as "other" geography courses, are in a definite minority.

IN the senior high schools, world or global geography again leads the list. It is followed by economic or commercial geography. Physical and "other" geography courses here are in a definite minority.

The statistics upon which the above listing of course is based may present a distorted picture because a number of the schools either did not answer the question or did so incompletely.

The findings of the survey may be summarized as follows:

1. The public schools covered by the survey generally believe that geography is worthy of inclusion in the school curriculum.

2. Most of the elementary schools, most of the junior high schools, and 50 per cent of the senior high schools generally believe that geography should be taught as a part of a social studies course.

3. Geography is being taught as a part of the social studies courses to a much greater extent than is desired by school administrators.

4. In those schools where geography is included within the social studies course, the status of geography within that course is extremely variable.

5. A very large majority of the social studies teachers and geography teachers, while doing an acceptable job in geography, need more training in that field to be entirely satisfactory.

6. Where teachers had received training in geography they were, generally, being used to teach geography.

7. Where geography is being taught as a separate subject, world or global geography is being taught most often and is followed almost equally by economic or commercial geography and physical geography.

STATISTICAL SUMMARY

Elementary Schools

Questionnaires sent to 58 county superintendents.
Questionnaires returned by 34 counties, covering 1,629 schools—58.6 per cent returned.
291 schools offer geography as a separate subject.
1,218 schools include geography in general social studies courses.
13 county superintendents indicated that social studies teachers are adequately prepared in geography.
18 county superintendents indicated that social studies teachers are inadequately prepared in geography.
32 county superintendents indicated that social studies teachers need more preparation in geography.
2 county superintendents indicated that social studies teachers need no more preparation in geography.

Junior High Schools

Questionnaires sent to 153 junior high schools.
Questionnaires returned by 109 schools—71.2 per cent returned.
19 schools teach geography as a separate subject.
97 schools offer geography as part of social studies courses (an apparent overlap of seven schools in above two items).
32 schools favor separate courses in geography.
67 schools do not favor separate courses in geography.
75 schools indicated that social studies teachers need more preparation in geography.
17 schools indicated that social studies teachers need no more preparation in geography.

Senior High Schools

Questionnaires sent to 439 high schools.
Questionnaires returned by 210 schools—47.7 per cent returned.
64 schools teach geography as a separate subject.
140 schools offer geography as part of social studies courses.
90 schools favor separate courses in geography.
90 schools do not favor separate courses in geography.
158 schools indicated that social studies teachers need more preparation in geography.
19 schools indicated that social studies teachers need no more preparation in geography.

Facts on 1947 College Enrollments

In interpreting the data concerning the 1947 college enrollments, Dr. Dale Russell, Director, Division of Higher Education, U. S. Office of Education, has emphasized these points.

In 1947, a total of 2,338,226 college students were enrolled in 1,792 institutions of higher learning (The U. S. Office of Education survey covered all but 21 of the 1,753 higher-educational institutions in the country.) These enrollments increased by 12.5 per cent from 1946 to 1947—the numerical increase being 260,131. The largest percentage increase was made by Negro institutions, which enrolled 26.5 per cent more students in 1947 than last year. Negro colleges now have 74,000 students.

Dr. Russell feels that the peak of veterans' enrollment apparently is being approached. There was only a 3 per cent increase in the number of veterans enrolling this year as against a 17 per cent over-all increase in enrollment for all students.

Remedial Reading Can Get Results

By RUSSELL L. TRIMMER
BERNARD R. CORMAN

The slow and seemingly hopeless readers present a baffling problem to the teacher. Is it worth while trying to find out the causes? What can be done about it? At the Corcoran High School it was decided that remedial measures should be attempted. This article describes their plan and its outcomes in the face of a pretty discouraging situation.

The article was prepared jointly by Russell L. Trimmer, Secondary Coordinator for Kings County, who supplied helpful materials for the experiment, and Bernard R. Corman, the teacher in charge of the class.

AT the Corcoran Union High School, a good percentage of the children come from families of farm laborers and migrant workers. Many of the children are rated as slow learners at their age levels because of years of interrupted attendance. In order to make a start toward the amelioration of this situation, a special class was started in January, under the supervision of Dave Davidson, Principal, and Russell L. Trimmer, Secondary Coördinator for Kings County.

The class was selected in two ways. The majority were chosen from among those scoring lowest in a *California Test of Mental Maturity* (Intermediate '47, Form S), which was given to the entire seventh grade of the school. The remainder of the pupils, mainly total nonreaders, enrolled on the basis of teacher recommendations.

The size of the class varied from 22 to 33. Of the entire class, twelve were Caucasians, twelve were Negroes, and twelve were Mexicans. There was a core of 20 pupils who attended school regularly throughout the semester. Seven of these were Caucasian, seven were Negroes, and six were Mexicans. Of the remainder, one pupil was returned to regular classes, five were withdrawn by transfer, and seven entered the class after the most of the training had been given.

The figures referring to race and nationality are important only in that they highlight the importance of language background and previous schooling as a factor in school failure.

Table I shows the low, high, and median chronological age, mental age, I. Q., and grade equivalent as determined by the California Mental Maturity Test score.

TABLE I—RESULTS OF CALIFORNIA TEST OF MENTAL MATURITY ADMINISTERED TO SEVENTH GRADERS AT CORCORAN UNION HIGH SCHOOL

	No. in Group	*Lowest*	*Highest*	*Median*
Chronological Age in years	30	31.1	17.6	14.4
Mental Age in years	23	9.9	13.7	10.8
Intelligence Quotient	23	61	82	75
Grade Equivalent	23	3.6	8.9	5.2

It is apparent from the above table that there was a considerable difference within the class on all counts. This made the problem of teaching difficult. It made formal class procedures impossible and resulted in the adoption of variations of group techniques. In addition to the above, it must be remembered that there was an additional group of total nonreaders for whom a com-

pletely separate procedure had to be devised.

CAUSES OF ACADEMIC FAILURE

Intelligence. The first problem that was faced was to determine to what extent the pupils' low record of achievement represented simply the academic expression of low intelligence and to what extent the pupils were true remedial cases. (A true remedial case, it will be recalled, is one who does not achieve as much as his mental age makes possible.)

Although the mental age and the I. Q. scores recorded in Table I would seem to indicate that the class was composed entirely of high-grade defectives (median I. Q. 75), personal observation seemed to indicate that in many cases the low scores on the *California Test of Mental Maturity* were the result, and not the cause, of low achievement. This appeared to be especially true in the cases of the Mexican students, who had linguistic as well as environmental difficulties to combat. Despite the fact that the median ratio, based solely on the nonlanguage factors of the *California Test of Mental Maturity,* showed little variation with the I. Q., based on the total score (— .6), observers were convinced that in individual cases the I. Q. thus derived was not an accurate picture of the pupil's mental capacity. In some cases, however, no other significant cause for pupil failure other than mental retardation could be found.

With this important reservation as to the validity of the *California Test of Mental Maturity* scores in individual cases, we could determine to what extent pupils represented a failure of the educative process and to what extent mental retardation was at fault. The *Sangren-Woody Reading Test,* Form A, was given to the readers in the class, and a comparison of mental ages, predicted reading level (as given by Samuel A. Kirk[1]), and actual reading level attained, gives us the following significant picture.

From Table II we see, then, that of the 21 cases for whom comparable data

1. Kirk, Samuel A. *Teaching Reading to Slow Learning Children.* Boston: Houghton Mifflin Co., 1940.

TABLE II—RESULTS OF SANGREN-WOODY READING TEST, FORM A, COMPARED WITH SCORES FROM CALIFORNIA TEST OF MENTAL MATURITY, INTERMEDIATE, FORM S

Case No.	Mental Age	Predicted Reading Grade	Actual Reading Grade	Difference (Approx.)
17	12.1	7	2.5	—4.5
7	11.2	6	2.5	—3.5
8	13.9	9	5.4	—3.5
14	10.8	5	2.1	—3.0
16	11.6	7	4.6	—2.5
11	9.7	4	2.1	—2.0
3	11.6	7	5.8	—1.5
18	11.0	6	4.3	—1.5
20	10.8	6	4.3	—1.5
24	11.6	7	5.4	—1.5
1	9.0	3	2.6	—0.5
2	10.1	5	4.1	—0.5
4	10.2	5	4.5	—0.5
6	12.5	7	6.1	—0.5
15	11.2	6	5.6	—0.5
19	11.0	6	5.9	—0.5
9	10.4	4	4.1	none
12	10.2	4	4.9	none
13	9.7	4	4.7	none
30	11.8	7	7.6	none
5	9.1	4	5.2	+0.5

were available, 10 cases were considered definitely true remedial cases, because their grade "lag" ranged from 1.5 to 4.5 grades. Ten cases were reading at the limit of their capacities, and one pupil was reading beyond what is normally expected for her mental age.

Also, Table II highlights the essential problem encountered in this special class. We see that we had not one, but three definite groups. One consisted of true remedial cases, one of mentally retarded children, and one a group of nonreaders. Measurement of the mental capacity of this last group is especially indicated.

These figures are, of course, only relative. A more accurate testing for mental age than that provided by the *California Test of Mental Maturity* score is to be desired. Since the success or failure of any remedial program depends on an accurate determination of what the pupil is capable, time and money invested in the administering of a nonlanguage mental test would prove profitable.

Physical Condition. The *Keystone Visual Survey Test* was administered by the health supervisor, and the reading eye movements of the pupils were photographed by Mr. Trimmer. On the basis of these two tests, 12 students were referred to Dr. Duffy of Hanford, California, for refractions. The findings showed that in almost all cases orthoptic training was indicated. Three students were found to be in urgent need of glasses, and these were provided through the coöperation of the Corcoran Lions Club and Dr. Duffy. Glasses, it was thought, would have proven helpful in several other cases, but since there was no great urgency about these, and since only limited funds were available, no glasses were provided. One pupil was found to have a cataract over one eye, and one was discovered to have an abnormal condition existing in the cornea of one eye.

Hearing tests were administered to all pupils. No cases of marked auditory difficulty were discovered.

No general physical examination was given, although there were indications of undernourishment among many of the students. A great number of the pupils came from large families, the heads of which were unemployed the entire period that the children attended school.

Only in one case was there a marked speech defect. Two other cases seemed to indicate the need for psychiatric examination. No facilities were available to assist these children.

School History. An examination of the school history of 22 of the pupils showed that, on the average, the students had attended five different schools. In one case the student had attended sixteen schools, and in another case, ten. One pupil had started school in the fourth grade and spent a total time of six months in school. Eight of the group had never been enrolled in the first grade at any school. Irregular school attendance was common among all the pupils.

Emotional and Environmental Factors. With but few exceptions, all pupils demonstrated marked antipathy to school and to reading in particular. Previous teacher reports indicated that nine of the pupils had been considered serious behavior problems. Four of the pupils were of the docile type. Two cases had built up such tremendous emotional blocks that they found it difficult to speak in class, and in one case this condition did not improve during the enrollment in the special class.

Once again, with but few exceptions, all pupils came from poor environments—for the most part from the farm-worker camps. None of the Mexican children hears English spoken in his home.

TABLE III—DIFFERENCE IN GRADE PLACEMENT OF TWO SANGREN-WOODY READING TEST SCORES GIVEN TWO MONTHS APART

Case No.	Form A		Form B			
	Raw Score	*Grade Equivalent*	*Raw Score*	*Grade Equivalent*	*Difference*	*Progress*
15	60	6.1	81	7.9	+1.8	+1.6
1	28	2.6	63	4.4	+1.8	+1.6
5	50	5.2	69	6.8	+1.6	+1.4
12	46	4.9	64	6.4	+1.5	+1.3
8	52	5.2	70	6.9	+1.5	+1.3
14	14	2.1	36	3.6	+1.5	+1.3
26	52	5.4	63	6.3	+0.9	+0.7
18	40	4.3	48	4.1	+0.7	+0.5
9	37	4.1	45	4.8	+0.7	+0.5
7	19	2.5	26	3.1	+0.6	+0.4
2	48	4.1	54	5.5	+0.5	+0.3
17	18	2.5	24	2.1	+0.5	+0.3
16	43	4.6	47	4.9	+0.3	+0.1
19	58	5.9	60	6.1	+0.2	0
13	44	4.7	46	4.9	+0.2	0
3	57	5.8	57	5.8	0	—0.2
11	14	2.1	14	2.1	0	—0.2
20	39	4.3	39	4.3	0	—0.2

RESULTS OF THE SPECIAL PROGRAM

The class was given Form A of the *Sangren-Woody Reading Test,* February 25, 1948. We had hoped to administer the tests before any training was started, but they were late in arriving. Form B of the test was given May 5, 1948. In this case we had to give the test well before the end of the school year, since withdrawals were heaviest about this time. This gave us a period of two months between testings. Table III shows the progress or lack of progress made in this period. It should be remembered, however, that the grade equivalents used here are those of the *Sangren-Woody Test* only, and not varied measures of accomplishment.

The median gain for the group for whom comparable figures were available was 0.6 of a grade. This represents special progress of 0.4 of a school grade over what would be considered normal for the two-month period.

For the total nonreaders, no statistics are available. There is every reason to believe that, given reasonably good attendance, the rate of development of both nonreaders and retarded or reluctant readers would show encouraging progress over the period of an entire school year.

Methods and Materials. There was nothing new or startling about any of the methods used in this special class. We started where the pupils were and built from there. In addition, since we felt that reading cannot be developed without practice, we gave our pupils ample time for reading. There was no attempt to adhere rigidly to any system of remedial work.

As we proceeded, the instruction became centered around these chief aims: (1) orthoptic training; (2) vocabulary development; (3) methods of word attack; (4) exercises in speed and comprehension; (5) the enjoyment of reading.

For the nonreaders we substituted the following more specific aims: (1) mastering of the *Dolch Sight Vocabulary*; (2) drill in phonics and sound blending; (3) reading of material on primary level.

The ophthalmograph scores on twelve of the children were possible to secure before undergoing six weeks of tachistoscope training and after they had had fifteen minutes training per day for

this period of time. The enrollment of the class was so unstable that it was possible only to secure this number of cases. It is noted that the scores on Test I indicated the children were, in the main, word-by-word readers. The average fixations were 140 per 100 words. The span of recognition varied from 0.57 to 0.93 with the average for this group at 0.73.

These results are tabulated in Table IV. There has been no attempt to treat these scores statistically. Inspection will reveal progress has been made in most instances. It is felt that a longer period of training would have been of definite value, and plans are to do so in the future. Dr. Duffy's examinations gave further confirmation to the fact that orthoptic training was needed.

We found the Keystone Tachistoscope the most successful device in this connection. The rate of improvement after the use of the tachistoscope was noticeable.

All members of the class suffered from a weak vocabulary and this, in turn, was due to the narrowness of their experiences. They had no foundation on which to build a wide vocabulary. While all the pupils were handicapped in this regard, the Mexican children were under a double burden. It was our feeling that lists of words taught as lists would not have much meaning. This belief was confirmed. Two such lessons were presented and were learned and forgotten in three weeks. We proceeded to build our pupils' vocabularies by increasing their experiences, vicariously, it is true. The use of audio-visual materials followed by class discussions, discussions based on articles in *My Weekly Reader*, and discussions based on the pupils' experiences all helped widen their vocabularies. Word lists were prepared on the basis of these discussions.

McCall and Crabb's *Standard Test Lessons for Small Schools* proved helpful in preparing drill exercises in speed and comprehension. In addition, variations of the old direction games, fable reading and the like were prepared on a level of the pupil's interest.

The emphasis on methods of word attack and the enjoyment of reading was on an individual basis. The pupils were given an hour a day to read. There was not too much supervision other than

TABLE IV—PROGRESS AS MEASURED BY OPHTHALMOGRAPH SCORES MADE BY STUDENTS IN CORCORAN UNION HIGH SCHOOL READING CLINIC

Case No.	Fixations per 100 words		Regressions per 100 words		Rate per minute		Comprehension Score (in %)		Time in Seconds		Average Duration per Fixation		Average Span of Recognition	
	Feb.	May	Feb.	May	Feb.	May	Feb.	May	Feb.	May	Feb.	May	Feb.	May
1	132	180	20	42	171	128	60	90	35.00	46.75	.26	.26	.76	.56
2	142	146	24	42	121	167	90	90	49.50	36.00	.35	.25	.70	.68
3	116	122	6	10	203	214	90	70	29.50	28.00	.25	.23	.86	.82
4	146	124	26	12	135	176	80	90	44.50	34.00	.30	.27	.68	.81
5	162	142	18	22	102	169	70	90	58.75	35.50	.36	.25	.62	.70
6	174	104	48	28	80	146	50	60	101.00	41.00	.58	.40	.57	.96
7	162	144	34	34	120	108	20	70	50.00	55.50	.31	.40	.62	.69
8	134	104	16	10	152	203	70	80	39.50	29.50	.29	.28	.75	.96
9	144	138	26	24	115	125	50	70	52.00	48.00	.36	.35	.69	.72
10	130	126	12	14	141	162	70	70	42.50	37.00	.33	.29	.76	.79
11	126	98	12	14	88	231	30	70	68.50	26.00	.55	.27	.79	1.02
12	102	118	16	6	218	253	70	60	27.50	23.75	.26	.20	.93	.85
Averages	140	129	22	22	137	174	63	82	49.85	36.75	.35	.29	.73	.80

to direct them to books that might prove interesting and to make sure that they were not reading material that was too easy or too difficult. This hour was used for individual work in which methods of word attack were supplied.

RECOMMENDATIONS

1. The basis for the selection of the remedial class cannot be a general mental test. Much more desirable would be the administering of some standardized silent reading test to all the pupils of the high school. A selection of those reading below their grade level could then be made and a mental test could be administered to rule out low intelligence as the cause of the lag.

2. Our experimental program was based on a four-period day. We could only devote a part of this time to the correction of reading difficulties. It seems that more could be accomplished by cutting the remedial period to two school periods. This would have two good results. It would make it possible for a greater number of pupils to come into the reading program, and it would narrow the gap between the remedial students and the rest of the pupils in the school.

3. The success of the work in tachistoscopic training makes it highly important to have the remedial room equipped with darkroom facilities, in which 10 to 15 students could be given visual span exercises while the class was in progress.

4. An eye examination should be given to all those scoring low on the silent reading test to rule out, as soon as possible, eye difficulties as the cause of poor achievement. Arrangements should be made to give a physical examination to all those in this group.

5. While no texts are needed for a program as outlined above, single copies of many books on the child's level should be obtained. There should also be many magazines available, including, possibly some of the better pulp magazines. There was a progression in reading all students seemed to make from magazines to short stories to full-length books.

6. Special reading classes must not be made a punishment group. It should be considered a privilege to enroll in these classes. This attitude cannot be legislated or dictated, but it is one that we must encourage.

International Control of Atomic Energy: A Film Strip

A 35 mm., single-frame film strip, entitled as above, is now available for release in English, French, Chinese, Russian, and Spanish.

Owing to the intricate nature of the subject, it is best suited for showing to adults, and will be of particular interest to political and social science groups.

Written to serve as a basis for group discussion, this film trip includes:

Part I. The formation of the United Nations Atomic Energy Commission, how it was established—what its tasks are.

Part II. The Proposals: The main plans for international control of atomic energy as presented by the various governments. The arguments for and against each.

Part III. Review: The main areas of disagreement.

Each film strip will be distributed together with two copies of the script and a discussion leader's guide.

Application may be made to the Department of Public Information, United Nations, Lake Success, New York, and the film strip will be sent free of charge to universities, clubs, churches, etc., and may be retained permanently for re-use.

Living a Course in Physical Science

By CARL V. GRUHN

It is becoming trite to use this "atomic age" as a basis for stating that science courses are of ever-increasing importance. But there is nothing trite about the main problem of the science teacher—that of aiding and encouraging student growth in the direction of curricular objectives in the field of science. It is a problem which represents a constant challenge.

Mr. Gruhn is well prepared to undertake the writing of a paper on this subject. His master's thesis at the University of Southern California consisted of a survey of the study of physical science analyzed from the philosophical and psychological points of view. He is an instructor of science and mathematics at the South Pasadena-San Marino Senior High School and his background for dealing with this subject has been developed by 19 years in the field and extensive graduate study.

THIS article is being written with the full knowledge of the many patterns a course in physical science may take in senior high school or college and the points of view with respect to the values of such a course which have been developed on the basis of certain patterns. It is not the purpose of this article to compare or discuss these values or these patterns, but rather to unfold the manner in which such a course is fulfilling the needs of boys and girls in the South Pasadena-San Marino Senior High School. The pattern which is to be discussed has been in the process of development for the past six years.

PURPOSE OF THE COURSE

The purpose of the course in Physical Science as taught in the South Pasadena-San Marino Senior High School is twofold. It should meet the needs of a college preparatory group as well as the needs of the non-college group, for whom this course is an elective. For the college group the purpose is to give to boys and girls that necessary background in the physical laws considered in the various science fields so that they may more intelligently select the science field of their choice if they are interested in science. It also should develop an understanding of the relationship of laws in the various science fields as they operate in nature to give us our daily experiences. It should develop an appreciation and understanding of the other man's occupation as it may affect his own, an attribute so essential to an intelligent voting public in a democratic society. What pertains to the college group also pertains to the non-college group. For the non-college student the physical science course should develop an understanding of nature's laws to the extent in which such understanding may help him select his vocational occupation and the type of training necessary for that occupation. It should develop, as a part of his thinking, the manner in which an understanding of nature's laws will bring about greater pleasure and satisfaction in understanding the problems of his fellow citizens as they may appear in print, over the radio, in the motion picture, or as the control of these laws bring to him the comforts of home and environment.

AREAS IN THE COURSE

To fulfill the well-defined purposes of the course brings up the question, "What fields in the physical sciences should be considered?" If a teacher has majored in chemistry, he immediately thinks of all the laws in his field he believes pertinent; if he has majored in physics, he does likewise, and so on. However, if the student's environment and daily experiences are considered, the selection of laws and the fields in which these laws are emphasized becomes quite simple. The number of laws to be understood will not be impossible because of duplication. Therefore, the more commonly applied laws in the fields of chemistry, physics, astronomy, meteorology, and geology, are considered in their natural sequence as the problems are unfolded by the student. Obviously, the material covered in these fields would be quite voluminous if taken separately, but placed together becomes a part of the student's living environment where any repetition only brings better understanding.

Naturally, such a course in physical science cannot and should not be confused with the standard courses in physics or chemistry. The approach is different in that the laws are applied in answering theoretically the questions "how" and "why" to the practical problems the student may experience. Time does not permit the development of the laws from a mathematical or experimental point of view, which is the technique used in the more specialized courses. Rather, their understanding becomes quite vivid through natural and experimental application.

The areas into which the course is divided again is largely based upon the student's consciousness of natural environmental changes. As school opens, the student and teacher alike are quite conscious of the unusually warm day contrasted by the cooler evening and night. A natural outgrowth of this consciousness is the study of an area on Fire, Fuels and Heat, including all the problems related thereto. Subsequent to this area is one on the Use of Power in Machines. Such a unit may partly be considered as heat and energy under control. The next natural environmental change of which the student is conscious pertains to the stars. During the time of year when the sky appears particularly clear, emphasis is placed upon the laws in astronomy as they affect our daily lives.

Astronomy correlates particularly well with meteorology which is studied at the time seasonal changes offer ready laboratory material for such study. Again, during the time people are becoming beach conscious, snows begin to melt, and earth disturbances appear in the news, an area on Earth Changes is considered. A study of the earth opens a new area on using Nature's Products which more directly affects our wants, needs, and comforts. The last two areas deal largely with the application of laws and theories pertaining to Light and Sound as those necessary elements which make possible our understanding of our environment and the enjoyment of things as man's ingenuity brings nature's laws under his control.

OBJECTIVES

The objectives of the course in physical science do not deal with the mere acquisition of facts and laws which do little else than confuse the student with what is known. Nor are the objectives set up solely for the college preparatory group or the non-college group. Instead, the objectives are determined by the individual student's need in terms of desirable outcomes as represented by behavior pattern changes. Since all students are a part of society and governed by the same natural laws, the selection

of objectives is determined by the student's relation to his environment, his relation to society as he assumes his responsibility in society, and his ability to develop for himself those mental appreciations and understandings which are so essential for personal enjoyment and satisfaction. Some rather general objectives in line with the previously mentioned purposes of the course are represented by the following:

To develop the ability to recognize the technical and scientific principles involved in the process of ordinary living as experienced in the home.

To develop the ability to apply scientific principles in answering the questions "how" and "why" which appear in daily environmental phenomena.

To develop an appreciation for the ability of people engaged in solving the problems in fields of endeavor which are indirectly related to the field of one's own choice.

To develop an understanding and respect for the various occupations and professions which utilize the same laws and scientific principles inherent in one's own field of interest.

To develop the ability to act with confidence and understanding on the basis of scientific principles where problems arise which require immediate solution with some understanding of the laws of nature.

To develop a clear understanding of one's own limitations and abilities in the application of scientific principles and skills in order to clarify the ultimate selection of a suitable career or occupation.

As can be seen, such general objectives when applied as criteria to the physical science areas bring out concrete and rather specific objectives which incorporate very definitely the scientific concepts, so much a part of our present-day activity in the home, the community, nationally, and internationally.

COURSE CONTENT

Course content is a point which is often asked about. If the general objective criteria are well applied, content becomes of little concern. If properly guided, students supply their own content by asking pertinent questions of interest as it is related to the subject area. Irrespective of the caliber of student, the subject area unfolds itself naturally in a similar pattern from one class to the next. The teacher's responsibility is that of a guidance so that a strong correlated theoretical build-up results. No theory, if relevant, is discarded, but is developed by the instructor for making possible the answer questions "how" and "why" as they appear with the student's unfolding of the problem. Naturally, the theoretical understanding varies with the student's ability to grasp the theory. The student of college caliber will grasp sufficient understanding to make possible further research in the more technical books on physics, chemistry, geology, astronomy, and meteorology. The non-college student is fully occupied with mere recognition and not necessarily complete understanding of applied theory. Content, if handled in this manner, will give to each student what he needs in order to develop understanding in proportion to his ability. The instructor must move the course horizontally through the practical aspect for all and at the same time inject the theory vertically so that each student feels a challenge to the maximum of his ability.

To avoid confusion in home study, a text is selected which the student finds easy to understand and which well fits the area pattern. All theory, including chemical structures, laws, atomic and nuclear physics, astronomical problems,

and the theory of meteorology necessary for flight are brought in from source materials. Source materials may include technical books, reports based upon interviews with industrial and professional men, current scientific journals, articles or related scientific lectures.

One of the most important sources of content is to be found in the audio-visual field. Strip films and motion-picture films make possible, through visualization, the rapid recognition, understanding and solution of problems introduced by the students. It is the apt use of audio-visual materials which makes a course, such as physical science with all its ramifications and infinite implications, understandable, and possible. A part of the visual program is the laboratory experiment and demonstration which is utilized to prove the practical results of theory applied. It is the write-up on such experiments which makes necessary the research on theory where only is found the answer to "how" and "why." All discussion of content is associated with visual demonstrations whether done by the student, the instructor, or through the film. Guided laboratory work becomes a "must" if skill is acquired in applying theory to practice.

Content does not remain as a common pattern for all, but becomes intensified in areas of particular interest to each student as he selects a problem for special research in line with his possible vocational choice or hobby. This research is governed by steps in the scientific method and must take concrete form by visually being presented as a possible project which reflects the scientific elements necessary for understanding. The final problem of content is not concern about where to find material for the poorest student or the best, but where shall the line be drawn. To avoid mere "talking about" a problem, the instructor and students alike should watch closely all scientific concepts and principles outlined with the objectives so that problems of interest can be solved as scientifically as possible. Appearance of too much repetition or introduction of material having no immediate relation to the subject will indicate that a change of topic is in order. If this is done, it has been found that almost all the laws normally included in the technical preparatory courses mentioned are covered with respect to their application.

EVALUATION

Just to cover content without measuring the attainment of objectives would lead to confusion on the part of the student as well as the instructor. Since behavior pattern changes are reflected in student activity, certain criteria serve to aid in evaluating student performance in carrying out the activities for the area. These criteria are represented by:

1. The degree to which necessary skills are developed in handling materials and equipment.

2. The extent to which basic scientific principles are included in the student's activity as it is carried out. This is often the answer to questions "how" and "why."

3. Does the student achieve his objective in performing the activity?

4. The extent to which safety factors are pointed out in the activity.

5. The extent to which a student achieves understanding of the principles involved as reflected in his ability to apply them to related situations.

After the performance of an activity, student progress is further evaluated on the basis of an activity report with the aid of criteria such as:

1. How clearly does he state the problem the group has selected?

2. How well does he state the objectives to be attained as they were determined by the group?

3. Does he include a statement of all materials required for the activity?

4. To what extent is the performance of the activity explained on the basis of scientific principles and concepts involved, with the results incorporated in their natural sequence?

5. Are situations cited to demonstrate application of principles?

One of the most important activities carried out during the year is the selection of a problem for the development of a project in line with the student's possible vocational choice or hobby. This activity is measured on the basis of the steps necessary in the scientific method of research and thought and how well the student can visually interpret his problem.

The student's understanding of the interrelationship of occupations and sciences can be seen by the extent articles of current interest are brought in pertaining to the subject, his report of industries visited and his reference to various fields where the same scientific principles find use. The usual testing programs also measure acquired knowledge more objectively.

EVIDENCE OF COURSE VALUE

Finally, evidences of the ultimate value of such a course may be found in student behavior changes as they affect his mode of action, thoughts, occupational activity or subsequent educational pursuits. Reports of countless incidents in occupational fields and the home environment which have been solved by the quick recall of scientific principles and applied to a natural setting has given proof of the functional value of the course for all. The excellent progress made by students in a subsequent course in chemistry or physics in high school or college after the course in physical science caused them to select these fields for further study has influenced others to select the course as a prerequisite to a more technical field. The number of satisfied reports by rather surprised students of their advantages over others in competitive examinations for scholarship and occupational placement further support such a program.

The unusual interest students have developed in working out projects in the field of their interest, which in some cases were completed after graduation, attests to the fact that the course becomes a living reality and not a school chore. A test meter developed by a boy is now used in his father's radio shop; a light-bank to prove how fires may be caused by overloading, as well as to show the reason for parallel wiring and voltage-amperage changes with loads, is used as laboratory equipment; the technical study of the effect of waves of reflected colored light as it enters the field of art made the art student conscious of the need for some scientific understanding; the accurate petroleum geology studied with the aid of trained geologists interested others; a room at home, rebuilt to study soils from all parts of the United States, continued after graduation; a television set, completed after graduation by a girl with no original background in science and built when parts could only be purchased in the East, operates perfectly.

Pictures of the projects seen on this page give but an idea of the work which can be done by students, if interest becomes a prevailing factor. It is with the unusual results obtained through such a course that it is felt the course supplies the necessary background in the physical sciences for all which will crystallize the thinking of the confused student as to a wise science choice and give that scientific understanding to the non-science student which will enable him to function adequately in today's scientific world.

The Experimental Mathematics Program

By DALE CARPENTER
CHARLES FABING

High school teachers of mathematics have been facing a perplexing dilemma in trying to serve the diverse needs of college preparatory pupils. Technical advances in engineering and the physical sciences are demanding more rigorous preparation in mathematics as the basis of admission to those lines of study. The emphasis best suited to the needs of students aiming at those fields is ill-adapted to the needs and special abilities of those who will follow other lines of study in college, and who can be best served by a more generalized type of high school mathematics.

Many teachers have believed that separate courses could be arranged to the advantage of both groups. This belief led to a serious study of the possibilities by a special planning committee and the development of the experimental program described in this article. The authors are closely identified with the program. Mr. Carpenter is Supervisor of the Mathematics Education Section in the Los Angeles Curriculum Division and served as Chairman of the Planning Committee for the experimental program. Mr. Fabing also served on the Planning Committee during the past two years and will now give full time to his responsibilities as Coördinator with the ten high schools in which the program is now under way.

THE two-track plan, *i. e.*, mathematics for college-preparatory students and mathematics for non-college-preparatory students has been advocated for some time by many teachers and administrators. Dr. William Reeve states in an editorial in the February, 1948, issue of *The Mathematics Teacher,* "We must begin at once to place more emphasis upon the need for a two or perhaps even a three-track system in mathematics to meet the varying needs of high school pupils." Among these varying needs are those of college-preparatory students. The needs of the mathematics and science major, the pre-engineer, and the liberal arts major must be considered in this group.

A group of Southern California teachers and representatives from several of the colleges, including the University of California at Los Angeles, have met as a committee and have planned a course for college-preparatory students other than mathematics, engineering, and science majors. The University of California has agreed to accept the course as an entrance requirement.

This experimental course of a practical, integrated, and functional type of mathematics is not unique. Many such variations have been tried at one time or another. However, the manner in which the course has been planned is probably unique. Various proposals have been made to create a more functional type of college-preparatory program. But, since these proposals have applied to all types of college-preparatory students, they have tended to decrease the mathematical background of the pre-engineering, science, and mathematics majors.

The purpose of the committee was to provide an alternate college-preparatory program comprising a functional type of mathematical experience for those students whose mathematical training, as such, will probably terminate in the senior high school. At the same time it will help those who are particularly interested in mathematics to make the most of that interest in pursuing a four-year mathematics course at the secondary level. The proposed experimental course should result in an improved performance on the part of both the general academic student and the mathematics, engineering, or science major.

We need to be very sure that those students who enter those professions which require an extensive mathematical background have the very best possible preparation in secondary mathematics. By recognizing that other groups of students need other types of mathematical preparation and by supplying such mathematical preparation, we will have an opportunity at the same time to improve the mathematical training of the mathematics majors. The mathematical needs of each group of secondary students and of each individual within each group will be best met if the curriculum is designed with specific objectives and interests in mind.

THIS experimental program is the outcome of two years of effort on the part of this committee of 22 high school and college men and women, who felt the need of a more suitable mathematics program for college-preparatory students other than mathematics, engineering, and science majors. The committee has planned a two-year program in mathematics, combining algebra and geometry and including the more advanced topics of arithmetic and an introduction to trigonometry. The mathematical qualifications for entrance into the course are the same as for entrance into algebra. The courses are being designated Mathematics I, II, III, and IV. They will be given in any four semesters of the senior high school. Fourteen high schools in Southern California have been selected to participate in the program. Appropriate records and uniform examinations have been established within the high schools so that the work of the students in the experimental program may be evaluated. College scholarship records will be utilized as a further means of evaluation.

The work of the Planning Committee to date has been as follows:

1. The determination of the purpose and nature of the experimental course.
2. The establishment of suitable controls for the experiment.
3. The preparation of a detailed topical outline of the course, including objectives, special emphases, mathematical content, major applications, and textbook references has been prepared.

The following list of controls, objectives, and special emphases will give the reader an understanding of the purpose and nature of the experimental course. The topical outline is too detailed to include in this article.

CONTROLS

1. The two-year mathematics sequence will be called Mathematics I, II, III, and IV.

2. The minimum length of time for the experiment should be six years.

3. The mathematical content shall be subject to revision during the six-year experimental period in light of experience as the program develops.

4. A comprehensive achievement test for each of the four semesters and an achievement test for the entire four-semester course will be prepared.

5. These achievement tests will also be given to students in the experimental

schools who are enrolled in the standard first-year algebra and plane geometry courses.

6. The experiment will be confined to the Southern California area in order not to complicate the study.

7. Six schools from the Los Angeles School System and eight Southern California schools outside of the Los Angeles School System will participate in the program. It was the desire that a cross-section of schools be obtained, including private schools.

8. The Office of Relations with Schools, University of California, seems to be the logical place where the actual collection of data and compilations could be made.

9. The results of the study will be based on the records of students in the experimental group who have completed the two-year sequence and of students who enter the University and coöperative colleges who have completed one year of formal algebra and one year of formal geometry.

10. The collegiate records of these two groups will be collected at the end of the first semester and again at the time when the students are ready to enter upper division work.

11. The Office of Relations with Schools will collect not only the University of California records, but the collegiate records of the experimental students who may have gone to certain of the four-year colleges or public junior colleges in California—these records to be evaluated in the same manner as the supplementary collegiate records. The colleges have been informed of the plan and their coöperation obtained.

12. It is understood that the students who have gone through the two-year experimental mathematics sequence, which will include both algebraic and geometric functions and principles, will not be held for any more mathematics in the university unless their particular courses of study require it.

OBJECTIVES

1. The ability to solve practical problems within the content fields of the course.

2. The ability to use the analytical method of problem solving.

3. The ability to make mental calculations and to make reasonable estimates.

4. An understanding of essential mathematical vocabulary and concepts.

5. The habit of forming judgments based upon objective information.

6. The habit of doing all written work in neat, acceptable form.

7. The habit of accuracy and of checking all computation.

SPECIAL EMPHASIS

1. Arithmetic should be reviewed as indicated in the outline and the concepts of fractions, percentage, and approximate computation will be stressed and applied throughout the course.

2. Elementary concepts of algebra and geometry will be introduced early in the course and expanded and applied throughout the course.

3. Ratio and proportion, and graphs will be expanded and applied throughout the course.

4. The application of mathematical principles to practical problems will be stressed at all times.

5. Approximate mental solutions will be stressed at all times.

6. The fundamental algebraic processes, including quadratic equations, will be presented.

7. Fundamental notions of geometry, including similarity and congruency, are first presented informally and used early in the course. The idea of formal proof is to be stressed in Mathematics IV.

8. Mathematics will be treated as a deductive science at all times.

CHARLES C. FABING has been relieved of his teaching duties at Dorsey High School, Los Angeles, to coördinate the experimental program. Mr. Fabing's background of teaching and interests will enable him to be of assistance to those principals, teachers, counselors, and parents, who are directly concerned with this program.

In order that the participating teachers may plan their work according to the policies established by the committee, Mr. Fabing's activities have already included: (1) a summer workshop for participating teachers, (2) preparation of a special record card in coöperation with the University of California, (3) preparation of a series of suitable tests in coöperation with the participating teachers and the University, (4) preparation of letters to parents and to counselors, (5) preparation of suitable textbook references for each major topic.

The detailed outlines of the experimental course and any further information desired may be obtained by writing to Mr. Charles C. Fabing, Los Angeles Board of Education, Room 314, 1205 West Pico Boulevard, Los Angeles, California.

Recommendations for Strengthening American Democracy

In March, a conference of school administrators and teachers from sixteen states, held in the U. S. Office of Education, agreed that "increasing tensions in world affairs create an urgent need for alertness by Americans to a possible crisis." Conferring on the "Zeal for American Democracy" program, this advisory group of educators, representing all levels of education, recommended to the Nation's schools and colleges both long-term planning and immediate-adoption suggestions "to assure the fullest possible understanding by students and other citizens of the implications of the developing world crisis, and of the need for strengthening American democracy."

Suggestions for Immediate Action:

1. Institute frequent assembly programs to inform students of the development of world events. (Map talks are particularly helpful.)
2. Introduce units of study showing how undemocratic forces endeaver to infiltrate American institutions and organizations.
3. Appoint a member of the faculty, preferably an alert social-studies teacher, to correlate the activities of the school program to develop zeal for American democracy.
4. Adapt current classroom programs to teach understandings about threats to our democracy and world peace. The social-studies and the communication-arts subjects especially lend themselves to such efforts.
5. Provide concrete and practical ways to practice democracy in the school—both in class and out-of-class activities—so that students and teachers may put into daily use what they learn about democratic concepts and values.
6. Stimulate every student in the school to think out his definition of democracy, and classes and school systems to work together on jointly-accepted definitions; and then to evaluate the practice of democracy in the light of the understanding expressed.
7. Encourage the widespread use of schools and colleges of daily, weekly, and monthly newspapers and magazines, especially periodicals designed for classroom use.
8. Utilize radio programs on current events in classroom work.
9. Plan 1948 commencement programs concerned with strengthening American democracy.
10. Co-operate with local organizations, and use all possible community resources to vitalize school and adult programs.

11. Request that local, state, and regional conferences being held during 1948 by both lay and professional organizations include in their plans and programs consideration of the world crisis and means by which American democracy can meet it.

Recommendations for Long-Range Planning:

1. Teaching the meaning of democracy—both its simple basic concepts and their implications for all segments of American life.
2. Strengthening basic loyalty to and trust of fellow citizens to an extent that the courage, vitality, and unity of American democracy will grow and endure, and withstand all attempts to divide our people.
3. Educating students to such a high sense of civic duty that they will feel that public service is an honorable obligation of the democratic citizen, and that they will choose representatives who are responsible and worthy of their faith.
4. Fostering the creative spirit of democracy in people's lives so that wholesome personalities will be developed and the dignity and value of the individual human being will be exalted.
5. Teaching the basic skills and developing the individual powers and desirable social attitudes that an effective participant in a democracy must have.
6. Instilling a respect for and constant search for truth.
7. Developing grateful appreciation of the sacrifice and service given by men and women throughout our history, in the origins, development, and continuance of our democracy.

John Aseltine, Principal, San Diego High School and Dean of Junior College, was one of the educators who attended this conference in Washington.

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How Much Carry-Over in Hygiene Teaching?

In the September number of the *Junior College Journal,* Miss Mildred D. Wollet, of the staff of Marin Junior College, analyzes the results of a survey of health education for women in California Junior Colleges which was completed something over a year ago. In her interpretation of the data secured through the questionnaire, which was returned by forty-one of the Junior Colleges in the state, she points out some conditions that have important significance for the curriculum.

Two matters emphasized in the article are particularly significant. One has to do with the type of position held by the persons teaching hygiene for girls in the California Junior Colleges. The greatest number are listed as physical education instructors. Next is the group of five science instructors, and the remainder list eight different types of position held by the person teaching the course. It is natural to assume that there is a correspondingly wide diversity of training and background possessed by the persons responsible for subject instruction.

The question as to how much of the instruction carries over into the actual behavior and health practices of the students was a special feature of the inquiry. On certain important aspects of behavior relating to health, the author found that the judgment of the instructors as to effecive carry-over were far from in agreemen and were reported as follows: Posture carry-over was claimed by seventeen instructors, while eleven saw none. Sixteen instructors thought that eating habits were carried over from hygiene classes; thirteen thought not. Weight control was seen by twenty instructors to be connected with hygiene information; seven stated that they saw no connection. The recognition and control of skin infections, such as acne, impetigo, and ringworm, were thought by thirteen instructors to be improved by hygiene-teaching, while an equal number thought not. The coöperation of students during vaccination and immunization drives and tuberculosis tests was reported to be excellent as a result of the teaching on these subjects. Twenty-one schools reported good results, while in seven others no improvement was noted. Interest in the results of physical examinations was a definite carry-over factor, as reported by sixteen schools; eleven did not think so; and two were doubtful.

UNESCO—As Seen by Student-Delegates

Compiled by HENRY CLAY LINDGREN

Fremont High School, Oakland.—"Since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed." And it is certainly true, even if the first clause of the Preamble to the UNESCO Constitution, quoted above, isn't entirely correct, that those attitudes and reactions "in the minds of men" which would tend toward an honorable peace and toward the brotherhood of mankind should be cultivated.

It is debatable, however, whether this Preamble clause is entirely correct. It must be admitted that there are other relevant factors, which either affect the situation without reference to the attitudes of the people or influence these attitudes in a direction contrary to the normal one.

UNESCO, by its purpose, its background in the United Nations, and its methods of action, can do little or nothing to change many of these factors, such as the basic evils in unlimited national sovereignty.

From this we see that when UNESCO is interpreted not as a last-

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When the editors of the JOURNAL decided to print an article on the Pacific Regional Conference of UNESCO, held in San Francisco May 13-15, it was decided that the most effective manner of presenting the subject was to use comments from student-delegates to the conference. The columns of professional journals of education are too seldom open to students, and the editors felt that UNESCO was a subject particularly adapted to this treatment.

To the educator, the UNESCO Conference was more than a meeting of public-spirited persons and groups attempting to forestall international cataclysm—it was also a learning situation, a curriculum laboratory on a grand scale, where adolescent and adult could practice the arts of waging peace and the skills of using understanding and tolerance to build a better world.

Accordingly, Dr. Lindgren, the Associate Editor of the JOURNAL and a delegate to the Conference, requested eye-witness reports from a sample of typical California secondary schools. The response was prompt and enthusiastic—so much so that it was not possible, because of space limitations, to use all reports nor to print in their entirety those which were used. Some of the reports omitted in this presentation will be included in a later issue of the JOURNAL.

Of special interest is one report from a high school student, who shall remain anonymous:

"In my opinion the ideas stimulated by the World Affairs Council and the UNESCO Conference are powerful and very vital to every American.

"I personally would like nothing better than to participate in world affairs programs and to utilize its various facilities in my own school. Many of the other high school representatives have done this and received amazingly good results.

"Unfortunately, however, the administration at ———— High does not favor, or have time to carry out, these activities, and I can do little about what I learned at San Francisco last May."

The JOURNAL trusts this attitude is not typical of California secondary schools.

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ditch effort to save the peace, which it is not now and cannot be under the present system, but as a genuine effort to broaden the ways of thinking of the people of the world, it attains a more realistic and definite value in relation to current and future world affairs.

Aside from this, I was most impressed at San Francisco by the way the group discussions were handled. An idea was submitted and, regardless of its origin—from a high-school student to a college professor—it would be considered in the light of the opinions of and facts presented by all the members of the group.

In the group to which I was assigned, there was a considerable number of high-school students, and I was impressed by the way our suggestions were admitted on an equal basis in the discussion. It seems to me that this is most important—another sign of the same trend indicated by the largely student composition of many of the national organizations active in world affairs, such as those advocating federal world government as a solution to the dilemma of international relations.

ROBERT HERSHBERGER.

* * *

Bakersfield College.—When Miss Bird, the Director of Bakersfield College, called me into her office to ask me if I would like to represent the college at the UNESCO Regional Conference, my suspicious reply was, "What's UNESCO?" I honestly had never heard of it before and, consequently, I didn't want to stick my neck out. When she explained that it was a branch of the United Nations and was one of the specialized agencies created to support the work of the UN, I felt worse. I thought everyone was of the opinion that the UN was dying a slow death anyway, so why prolong the burial with unnecessary, time-consuming conferences? What in the world could 3,000 people, representing educators, veteran groups, businessmen, professional people, labor organizations, clergymen, students, religious and racial groups, etc., *possibly* accomplish in three days of luncheons, teas, and gabfests? Miss Bird insisted the experience would be intellectually stimulating and I was just as sure it would be "just another conference." As is usually the case, Miss Bird was right and I couldn't have been more wrong. That UNESCO Conference was different in every sense of the word.

In the first place, there was organization. I don't know when I have ever seen such precise, methodical organization. Registration was a snap. Pamphlets gave directions for each day's activities, with every step clearly outlined. When they said busses would be at such and such a place at such and such a time, they were there. Plenary sessions as well as sectional meeting started and stopped on time. Everyone connected with the organizing committee knew what his particular job was and proceeded to do it well. In a word, there was a noticeable lack of confusion that usually accompanies the ordinary conference.

And those plenary sessions were wonderful! We all realized there would be nothing but speeches and talk in only three days of meeting on such an important subject as peace, but what speeches! If ever inspiration was handed from a rostrum to an audience, it was during those plenary sessions. William Carr, Margaret Mead, and Vera Dean were the three outstanding speakers in my mind, and their speeches alone would have justified the Conference. In all of the speeches, as in all of the meetings, homage was paid to no particular nation, group, or individual—it was a meeting of minds on how to meet the present world crisis with understanding.

There was one other thing that bothered me about a conference on peace. I thought, isn't that a job for our governments to tackle? What can we do as individuals? I soon found out. The subject was attacked from the local viewpoint. The same tensions, hatreds, and prejudices that are found throughout the world are found in our own communities, so why not start on that level? We weren't planning on solving the world's problems with three days of discussion; we weren't biting off a chunk so large that we couldn't chew it; we weren't passing idealistic resolutions for Congress to do such and so—we were exchanging ideas and programs to educate the world on the ways and means of peace by starting in our own back yards!

At the first plenary session in the War Memorial Opera House we were told that this was to be a "working" conference. Inwardly I had visions of small sectional meetings at which chairmen or speakers would dominate the floor telling us what we should do to contribute to world peace. Again I was all wet. The system they used was remarkable! No long-winded speeches or oratory, but discussion, opinions, and contributions from the delegates themselves. And again there was that keynote of organization—an intelligent chairman to start the ball rolling, an observer to keep the discussion from wandering away from the point being discussed, an expert to give decisions or background history on a disputed point, and a recorder who took notes on what decisions were reached. It was truly a working conference. Those section meetings were quite exciting sometimes, too. In our group on Human and Social Relations we had a good representation of the so-called minority groups. It was interesting to note their opinions on many subjects. I'll never forget the evening when some misguided individual made the remark that there had been a great influx of Negroes in the Bay region and it was up to the community to teach them how to become Americans. Silence fell over the group for a moment and then the replies started. A young Negro led off with a quiet, sensible short speech that not only silenced the outspoken individual, but brought a smile to many lips.

The conference as a whole was the most stimulating and refreshing I have ever witnessed. I'm sure every delegate left San Francisco with new hope and spirit for the United Nations and the world. The weary, time-worn subject of global peace had been recreated into a challenging, individual problem that gave each of us more to think about. We woke up to the fact that peace *is* too big a job for governments and must be accomplished through the people, that's why UNESCO represents peoples speaking to peoples. The world must be educated in the ways of peace; it's a slower method to be sure, but it is a more positive means of rebuilding war devastated minds. Two slogans of UNESCO, or rather two phrases, that might well be slogans that stuck in my mind are "that since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed"; and "UNESCO is a David facing a Goliath of ignorance."

When I left the Pacific Regional Conference on UNESCO, my opinion of it was pretty well summed up in those two slogans. UNESCO is a David, a hard-hitting, slow but sure David that is valiantly trying to fell a Goliath of ignorance through world understanding. And difficult though the task may be, it has a well marked, easy path to follow—"since wars begin in the minds of men, it's in the minds of men that the defenses of peace must be constructed."

As William Carr stated in his speech, the test of UNESCO's success or failure will be simple. If there is another world war, UNESCO will have failed. If there is world peace, UNESCO will have succeeded. It is obvious that we can't afford to fail, so we must meet crisis with understanding. It's up to us to make UNESCO synonymous with world peace.

DON RODEWALD.

* * *

Sacramento Senior High School.—The thing that impressed me the most about the UNESCO Conference was the almost overwhelming fact that here was I, just a high school student, and yet I was taking an active part in a project as huge and as important as the program of UNESCO. At the plenary sessions, interesting yet detailed talks set up a pattern for the purpose of showing how to get the most out of the conference and explained what UNESCO had done and was planning to do. Then we broke up into sections. My particular section was Human and Social Relations, in which we discussed the tensions that lead to war. We got many and varied opinions on all phases of the subject because of the difference in backgrounds of the participants. They went all the way from high school students to college professors and from storekeepers to sheep ranchers, and each one had a chance to express his views. The climax of the conference for me was the high school luncheon at Galileo High where the movie actors, Myrna Loy and Joe E Brown, emphasized the importance of the high school student in the program of UNESCO.

Upon returning to Sacramento, I gave a ten-minute talk to the student body on the conference, and was very pleased with the attentiveness and interest with which they listened. I think acquainting high school students with UNESCO and getting them to do some thinking about it is a good start toward realizing the goal of UNESCO.

JERRY DROBNY,
Student Body President.

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College of Marin, Kentfield.—My personal impressions were varied and unconcatenated. I was pleased to note little oversimplification of problems, and few attempts to dodge the enormity of them. I was deeply impressed by the tremendous ability (really outstanding) of Dr. Carr, who spoke at a plenary session.

In section meeting, the great problem of opinion diversity was encountered. In a session on eliminating racial prejudice and discrimination, for example, personal comments indicated that a not inconsiderable number of delegates who were discussing methods of applying UNESCO principles did not even believe in those principles!

I felt that the conference was an education and an inspiration to participants, and that it might be as efficient an organ as any for these purposes on a mass scale. In other words, send everyone to a UNESCO conference.

ROBERT E. BICKFORD.

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Pasadena Junior College.—The plenary sessions were worked out only fairly well to my mind. The extremely ponderous and numerous potentialities of the sessions were touched only in part. The talk given by Erwin Canham impressed me as one firmly set, in well-substantiated background, thus highly appropriate and within the scope of UNESCO. Aside from the trend offered by Vera Micheles Dean, I thought the plenary agenda mildly void of qualified speakers.

The smaller sessions were extremely beneficial in that they allowed one to

express his thoughts, and while doing same the delegate actually offered to the group material of great value. I believe I drew the most from the Communications Sections, which dealt (almost in entirety) with the means of disseminating UNESCO information to the general public. The session leader was the person who added much to the success of the meeting. So it seemed to follow that the more well versed the discussion leader, the more beneficial the discussion. The foregoing reasoning was intercepted and prepared for *in part* by the preschooling of the discussion leaders.

Richard T. Gray,
Past A. S. B. President.

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Marysville Union High School.—My experience at the UNESCO Conference in San Francisco was much like the dawning of a new day to me. Even though I had read the preliminary material, the idea and the purposes of UNESCO were still not too vivid in my mind. As I listened to the speakers and attended the discussion meetings, I began to realize what an important position my fellow students and I occupy in this worldwide movement for better understanding. Now I know that the peace cannot be gained by our great leaders alone, but that each one of us must exert himself to overcome the difficulties and the barriers of international understanding.

UNESCO will, I am sure, slowly but definitely become implanted in the minds of the young people of this country. A better understanding between the students of this country and those of other countries achieved through UNESCO will be carried over into adult life, and together we may build a new world full of tolerance and friendship.

John Lamon.

Pasadena Junior College.—It is the usual occurrence at conferences to discuss a subject, argue about it, and then do nothing about it, but at the UNESCO Conference many ideas which we could solidly grasp were presented. We were given something to take back with us to present to our community, social group, or, in my case, to my school. Here we were a group of people actually working together for a common cause!

I liked the phrase, "Since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed." To me that meant that we must begin right here in our own community to get people to work together and understand each other. Then let it spread from one community to another, one country to another, until it finally envelops the entire world.

Another phase of the conference which was particularly enjoyable to me was the luncheon for college students. Here we worked together to draw up a program of what we thought we should do to further UNESCO on our respective campuses. I might add that one of the particulars stressed was that we should have more international exchange of students. I am proud to say that we are doing just that on our campus. We, who were delegates for Pasadena City College, also formed a panel and spoke for two consecutive days to the Social Science classes, telling them about UNESCO and, even more important, telling them what their duties are in supporting UNESCO.

All in all, I feel that the trip was most beneficial, not only in opening my eyes about UNESCO, but in giving me something to bring back to pass on to others.

Jeanne Colvar,
Past A. S. B. Vice-President.

Guidance Opportunities for Industrial Arts Teachers

By OLIVER P. EITZEN

MUCH has been written about the rôle of the teacher in the school guidance program. Many guidance workers have emphasized the important function of the teacher in assisting the pupil in making decisions pertaining to vocations and in educational planning, as well as providing worthwhile contributions towards the student's personal adjustment, health, and recreation. All of these are inseparable factors in the development of each pupil. There is considerable belief that the special-subject teacher, and particularly the industrial arts teacher, is at a decided advantage in rendering guidance services as a teacher.

In a recent survey, a number of junior high school industrial arts teachers and counselors were interviewed regarding their opinions concerning the industrial arts teacher's guidance opportunities. There was strong agreement in that opportunities lie in a number of different areas of guidance—vocational, educational, recreational, and personal. All of these areas, of course, must be considered as interrelated phases of the school's guidance services.

The junior high school industrial arts teacher is in a position to assist many individuals in the study and selection, at least on a tentative basis, of an occupation. Opinions vary, beyond this point, however, as to the amount of actual preparation, assistance in entering an occupation, and follow-up that should take place on the junior high school level. It is frequently felt that because industrial arts is that part of the curriculum which perhaps most closely resembles the work of over half the nation's labor force, it is most valuable in providing occupational information and exploratory opportunities.

Moreover, the industrial arts teacher is at a particular advantage when he provides education guidance in assisting the pupil by charting the offerings of the school. As the individual discovers his interests and abilities, his next problem is to learn how much training is necessary to pursue a related occupation and where such training might be obtained.

To assist the individual in becoming a wise consumer is another area in which the junior high school industrial arts teacher has unusual opportunity. He may provide training in intelligent consumership in tools, materials, services, and construction, and may thus improve the standard of living for many students who are of poorer means. Hence, consumer guidance is another very important area of contribution on the part of the shop teacher.

Mr. Eitzen graduated in 1939 from Santa Barbara State College where he majored in industrial education. He subsequently taught junior high industrial arts for four years in the Bakersfield City Schools. At present he is engaged in graduate study in the field of guidance in the School of Education, Stanford University. The conclusions presented in this article are taken from his master's thesis, entitled "Guidance Opportunities of the Junior High School Industrial Arts Teacher."

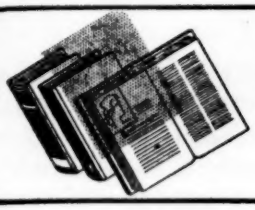
BECAUSE of the definite relationship between interest and achievement, a further opportunity of guidance exists—recreational guidance. The industrial arts teacher may help the pupil to discover leisure-time pursuits and may aid him in enriching those which are already in existence. Industrial arts teachers have aided many students in discovering hobby interests and encouraging their growth through the junior high school shop. Furthermore, recreational guidance on the part of the industrial arts teacher may extend far beyond school shop, for his influence is in evidence in such activities as the home shop, Boy Scout work, and various other hobby and craft groups.

When he assists the pupil in the development of such traits as self-confidence, honesty, willingness to share shop tools, courtesy, and good manners, the unique opportunities of the industrial arts teachers to provide personal guidance are unlimited. It has been noted, however, that industrial arts teachers, guidance counselors, and other junior high school staff members are at times inclined to overestimate the shop teacher's ability in dealing with "problem cases." The term "problem case" is usually used to designate students with atypical traits such as low mentality, physical handicaps, and various forms of personality or behavior disorders. This situation is somewhat unfortunate, particularly when such referral is made as a result of the diagnosis of unqualified staff members. Only upon the recommendation of the school psychiatrist, psychologist, physician, or some other similarly qualified authority, should the industrial arts teacher undertake to rehabilitate pupils with known abnormalities. Upon such proper recommendation, however, there is evidence that industrial arts facilities can render a most useful service. Moreover, it is the industrial arts teacher's duty to be especially alert for any indication of abnormalities among his pupils and to refer them to persons who can provide assistance. There must be less teacher diagnosis, but more frequent detection and referral of the atypical pupils.

An inspection of the curricula of a number of industrial arts teacher training institutions reveals a relatively limited amount of preparation in psychology and guidance is required for prospective teachers in this field. Unfortunately, this limited training is hardly commensurate with the guidance opportunities and responsibilities of the industrial arts teacher, and it contrasts unfavorably with the expectations of many administrators and other staff members.

ON the other hand, if the "problem case" is due primarily to a lack of interest in academic school work on the part of the pupil, perhaps because other teachers have not succeeded in "reaching the boy," the junior high school industrial arts teacher is faced with a challenge and a responsibility. At his disposal are the practical and nonacademic realities of problems which can be both seen and felt, the opportunities for self-rewarding, creative work, the intrinsic motivation which handicraft provides—in these are a few of the guidance tools not elsewhere to be found in the school program.

Hence, the junior high school industrial arts teacher's excellent opportunities for rendering guidance services on the instructional level might well merit further consideration in educational planning, both from the standpoint of the function of the school as well as an objective in teacher training.



Book Reviews

BASIC READING SKILLS FOR HIGH SCHOOL USE. *By William S. Gray, Gwen Horsman, and Marion Monroe.* Chicago 11: Christopher Publishing House, 1948. Pp. 91. $2.00.

THIS workbook will prove of especial interest to high school teachers engaged in the improvement of reading. It is particularly recommended to instructors who are not specialists in the field of reading.

The major emphasis throughout this comprehensive workbook is upon attainment of meaning. To accomplish this aim the authors provide for the achievement of many of the skills involved in reading competence. One significant aspect of the book is its synthesis of the areas of word recognition and interpretation.

Seldom does a workbook in any field offer so many concrete and useful aids for the teacher. In their "Notes to the Teacher," the authors present a careful analysis of the material covered on every page of the book. The nature and purpose of each exercise is clearly stated. In addition, there are hints for presentation and discussion of this material in the classroom. Also included is an "Index of Skill-Building Exercises" which should be of great value in providing for individual differences. A "Teachers Edition" is available and contains a very convenient key to all the exercises.

There is much in this workbook to motivate the pupil. The print is large and readable, and there is an abundance of pictures, diagrams, maps, and charts—all calculated to catch the individual's interest and hold it. The story materials are simple enough to provide for the disabilities of the poor reader, yet high enough in interest value to match his chronological and emotional development. Many of the activities prescribed in the book undoubtedly will seem more like games and puzzles than work-type exercises.

Supplemented by a rich program of free reading, *Basic Reading for High School Use* should serve as an effective aid in the development of reading efficiency as well as a stimulus to greater enjoyment and appreciation of the printed page.—GEORGE R. DIETZ, *Instructor in Language Arts, San Francisco State College.*

REHABILITATION OF THE PHYSICALLY HANDICAPPED. *By Henry H. Kessler, M.D., Ph.D.* New York: Columbia University Press, 1947. Pp. 274. $3.50.

DR. KESSLER'S well-written, stimulating work consists largely of observations made as a result of a quarter of a century of work in vocational rehabilitation programs of state, national, and international scope. The guidance worker who reads the book will find analysis, description, and criticism of such diverse phases of rehabilitation as: the disabled veteran, rehabilitation centers, vocational guidance, vocational training, the mentally and emotionally disabled, and legislation for the handicapped.

Of special interest to guidance workers is the chapter on vocational guidance, in which Dr. Kessler pleads for skepticism with regard to test scores and for confidence in the ability of "the average man to do the average job." He questions the aptitude tests' claim to prophecy and pleads for humility in vo-

cational counseling. He admits that personnel managers and physicians are as much at fault as vocational counselors and psychometricians by setting arbitrary limits to the capabilities of various types of disabled persons. In this connection, he tells "one on himself": As the physician for the State Industrial Accident Commission he had certified for total and permanent disability a structural ironworker who had fallen from a scaffold and suffered a broken back and paraplegia. Six years later this same man reappeared at Dr. Kessler's office, without braces and crutches, looking for work in his former trade. It then developed that, although he was somewhat unsteady on his feet, this man had actually been working as an ironworker for the past two years twenty stories above the ground and had only become unemployed when his employer had gone out of business. For such a person "total and permanent disability" had no meaning. Incidents of this kind are witness to the existence of a huge reservoir of untapped "potential for adjustment" which exists in all of us—the "safety factor," as Dr. Kessler calls it.

But Dr. Kessler's text goes beyond the scope of a text on rehabilitational techniques. *Rehabilitation of the Physically Handicapped* is deliberately intended to jar the complacency and negligent attitude of the American public with respect to its responsibilities toward this group of rejected citizens.

The handicapped person has great difficulty in obtaining employment as a general rule. Although progress has been made in educating employers in the evaluation of handicapped persons in terms of their capabilities rather than their disabilities, general acceptance of the handicapped person as potentially employable is generally lacking. It is still an uphill fight against sheer prejudice and unreasoning stupidity. Dr. Kessler cites several examples to demonstrate this "inhumanity of man toward man." Perhaps the most striking is that of the employer who was persuaded to employ a blind dictaphone operator, who became so efficient that she did the work of several stenographers. Needing more help, he returned to the agency which had sent him his blind employee, and they suggested he hire an additional blinded person. He bridled at this proposal, exclaiming, "I've done my bit!"

This incident portrays rather dramatically the underlying cause of the plight of the handicapped—our reaction to the handicapped person is emotional rather than rational. Dr. Kessler traces this attitude back to the days when handicaps were thought to be the result of sin and the Devil. The subconscious existence of this "inherited" attitude has resulted in the repugnance which we feel toward the disabled person.

Nor does Dr. Kessler have much to say in favor of the sentimental approach to the problems of the handicapped. This attitude has resulted in legislation which is palliative rather than constructive. Then there is the more or less conscience-stricken attitude which leads to legislation based on the theory that all needs of the handicapped can be met with pensions and awards. While these laws may serve the purposes of supplying the subminimal needs of the severely disabled, they frequently encourage the development of dependent cripples rather than contented citizens, actively producing and participating in the life of their communities.

Dr. Kessler gives due credit to the public and private agencies which have worked for years at the task of rehabilitating the physically handicapped. He feels that their work has been both a success and a failure—a success in that they have done so much in terms of gross numbers of persons rehabilitated, and a failure in terms of the greater

number of handicapped persons they have not reached. He believes, further, that these agencies hold the key to the fate of the handicapped, since they alone are equipped to give the three essential services which must be rendered: physical restoration, vocational guidance and training, and selective placement.

Although it is his opinion that public prejudice toward the disabled is the greatest obstacle to rehabilitation, he believes that a frontal attack on this attitude in terms of propaganda or coercive legislation would yield negligible results, and that the solution to the problem rests with the individual—that we must physically restore, advise, train, and find employment for the handicapped person to enable him to stand on his own feet and meet the challenge of competition in earning his livelihood and maintaining his status as a participant in the social and economic life of the community.—H. C. L.

Careers for Youth—Army Style

An Army circular states that the career-guidance plan seeks to make service in the Army a dignified and attractive career for the American citizen "and to permit his advancement to the highest grades and ranks, limited only by his ability and initiative."

"The system of career guidance, involving self-improvement, apprentice and school training, provides for grade advancement through competition. This program will build a permanent peacetime Army of broadly trained, well-rounded enlisted personnel and warrant officers, and which will in time of emergency make an important contribution to an adequately trained cadre for mobilization."

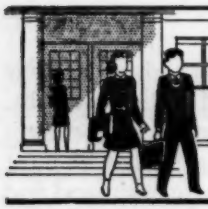
The Army's career-guidance plan is being carried out in accordance with a pattern which will be of interest to educational guidance workers. It consists of three steps.

1. Army job analysts first studied and described every type of occupation needed in the Army. Research on job analysis is being kept current with changing technology and materiel.

2. Job analysts next grouped all of the jobs in the Army into fifty career fields. Among them are food service, railroad operation, animal handling, construction, and photography, as well as strictly military occupations.

3. For each of the occupations, the Army prepared a series of booklets describing the job; courses of training to permit a man to move up the occupational ladder of his chosen occupation; and finally examinations and tests to determine whether an individual has mastered the skill or technical knowledge necessary for the job for which he is a candidate.

Those who desire additional information may write to Colonel Reuben Horchow, Office of the Adjutant General, Pentagon Building, Washington 25, D. C.



Secondary Sketches

Edited by EVERETT V. O'ROURKE

Curriculum Development at Avenal High School.—For the past four years the faculty of the Avenal High School has been working on problems relating to curriculum reorganization in the light of student needs. A philosophy and basic principles have been developed which are used in the development of all curricula.

Revisions have been made in the fields of health, English, science, mathematics, languages, and in the vocational subjects. Principal Reilly writes that the courses of study now offered have been designed to provide for common learnings, personal interests and needs, and for vocational preparation. The development of an adequate counseling and guidance program has paralleled the reorganization of the curriculum.

Three courses of study are offered: college preparatory, commercial, and general. In addition to State requirements for graduation. Avenal High School specifies one year each of science, orientation, senior psychology, homemaking (girls) shop (boys), and four years of English. The English program has been completely reorganized to provide for student needs and interests: i. e., college-preparatory English, business English, vocational English, journalism, and public speaking. Students may be excused from the fourth year of English if they pass a comprehensive test which is given at the end of the eleventh year.

The dean of girls and the dean of boys serve as advisers to college-preparatory students, the head of the commercial department to commercial students, and the heads of the industrial-arts and home-economics departments to the general-course students. Advisers consult with students when they register and continuously assist with and guide them in their programs. New grading policies, new report cards, and a new student handbook are the results of the guidance committee's extensive studies. Careful and critical use is made of intelligence, achievement, personality, interest, and aptitude tests.

The orientation class taught by the deans has been designed as a group-guidance course, the purpose of which is to orient the student to school and society. The senior-psychology class aims to make the student aware of his own vocational, cultural, and spiritual needs and responsibilities. The industrial-arts, commercial, and home economics classes have been planned to prepare students for specific occupations and useful living.

According to Mr. Reilly, the program is still in the process of being developed. It has been well received by the community and by the students. Better school morale is evident and there is a general feeling that the school is making progress in meeting the needs of its students.

* * *

Foundation Mathematics in Berkeley High School.—Last fall, Berkeley High School introduced Basic Mathematics, a remedial and review course for those students not registered in any of the mathematics courses regularly offered and for students who need a brush-up course in arithmetic before proceeding with algebra and geometry. A need for such a course became ap-

parent when arithmetic tests, given to high seniors over a period of time, showed that in many cases the high school was graduating students who had forgotten most of their learning in arithmetic.

"The greatest need for instruction was found among those students who were neither enrolled in the shop and commercial departments which offer mathematics courses, nor registered in the regular college-preparatory mathematics course," writes Mr. O. W. McGuire, mathematics teacher at Berkeley High School.

"We use a workbook entitled *Foundation Mathematics,* which carries explanations, example problems, and drill problems with plenty of work space. . . . In addition to the workbook, we use a set of new filmstrips entitled 'A Study of Fractions.'[1] These filmstrips give the student a graphical presentation of common fractions and of the fundamental operations with them."

In class, the students work in their workbooks, aided by class instruction and individual help whenever needed and as time permits. The books are not taken home, a practice which forces the pupil to do his own work, aided only by the teacher. Progress is checked regularly by the use of the many tests in the text.

In a standardized arithmetic test, given at the end of the semester, the class taking this course produced a median score well above the median score made by the High-Ten group who were given the same test in the spring semester. It is believed that the accomplishments in this course justify the effort; and as a result, three classes in Basic Mathematics are scheduled for the coming semester.

1 By O. W. McGuire. Produced by Photo and Sound Productions, San Francisco.

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Leadership Training Class at John Burroughs Junior High School.—"Believing that the best training for citizenship is democracy in action, administrators at John Burroughs Junior High School in Burbank have consistently placed school government in the hands of the students themselves," is the word received from Miss. Nedra Thiemig, faculty sponsor at the school. In 1943, the student body adopted a constitution modeled on that of the national government and based upon these forms of democracy which best met the needs of a rapidly growing school population. Their constitution provided for a cabinet elected by the student body, and a congress composed of the cabinet and a representative chosen by each of the social-living classes. Provision was made for a student court, which was inaugurated in October, 1947.

Increased school population led the cabinet, in March, 1947, to begin a systematic survey of those neighboring schools, which had successfully dealt with similar difficulties, and to examine available literature. The resultant findings were submitted to the faculty and administrators, who assisted in drafting a plan for a leadership training class. The class met for an hour each day, during which time the class members held cabinet meetings weekly, congress meetings monthly, and sessions of the student court, as necessary. The class also provided a planning period for school activities.

An evaluation of the leadership class at Burroughs proves it to be one of the most important steps taken locally in providing boys and girls with practical experiences in democracy and in developing them into worth-while citizens, according to Principal Merrill.

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